

CHAPTER 4

POINT AND NONPOINT SOURCE CHARACTERIZATION OF THE LITTLE TENNESSEE RIVER WATERSHED

4.1 Background.

4.2. Characterization of HUC-10 Subwatersheds

4.2.A. 0601020402 (Little Tennessee River)

4.2.B. 0601020403 (Abrams Creek)

4.2.C. 0601020404 (Tellico River)

4.2.D. 0601020405 (Little Tennessee River)

4.1. BACKGROUND. This chapter is organized by HUC-10 subwatershed, and the description of each subwatershed is divided into four parts:

- i. General description of the subwatershed
- ii. Description of point source contributions
- ii.a. Description of facilities discharging to water bodies listed on the 2002 303(d) list
- iii. Description of nonpoint source contributions

The Tennessee portion of the Little Tennessee River Watershed (HUC 06010204) has been delineated into four HUC 10-digit subwatersheds.

Information for this chapter was obtained from databases maintained by the Division of Water Pollution Control or provided in the WCS (Watershed Characterization System) data set. The WCS used was version 2.0 (developed by Tetra Tech, Inc for EPA Region 4) released in 2003.

WCS integrates with ArcView® v3.x and Spatial Analyst® v1.1 to analyze user-delineated (sub)watersheds based on hydrologically connected water bodies. Reports are generated by integrating WCS with Microsoft® Word. Land Use/Land Cover information from 1992 MRLC (Multi-Resolution Land Cover) data are calculated based on the proportion of county-based land use/land cover in user-delineated (sub)watersheds. Nonpoint source data in WCS are based on agricultural census data collected 1992–1998; nonpoint source data were reviewed by Tennessee NRCS staff.

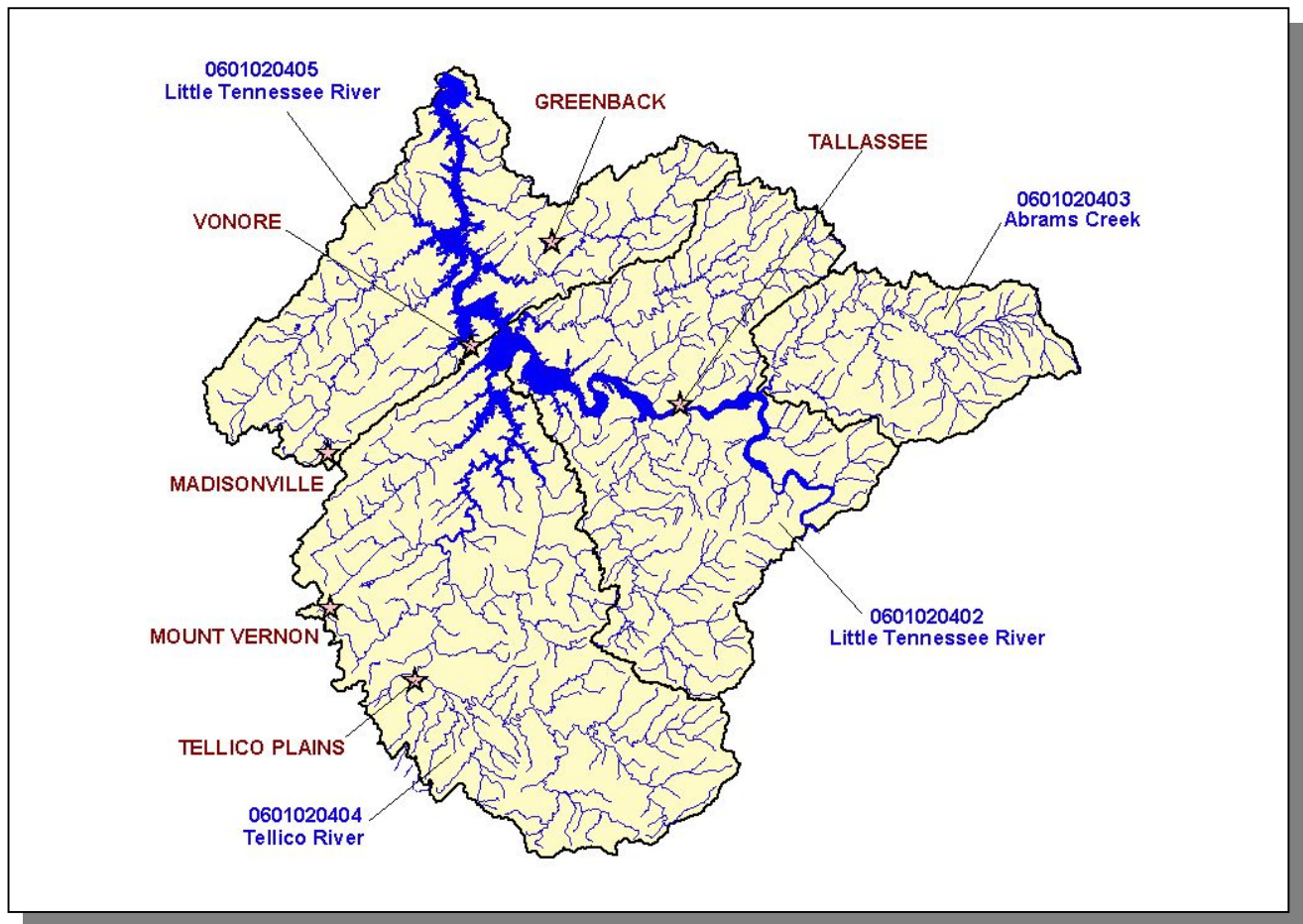


Figure 4-1. The Tennessee Portion of the Little Tennessee River Watershed is Composed of Four USGS-Delineated Subwatersheds (10-Digit Subwatersheds). Locations of Greenback, Madisonville, Mount Vernon, Tallassee, Tellico Plains, and Vonore are shown for reference.

4.2. CHARACTERIZATION OF HUC-10 SUBWATERSHEDS. The Watershed Characterization System (WCS) software and data sets provided by EPA Region IV were used to characterize each subwatershed in the Tennessee portion of the Little Tennessee River Watershed.

HUC-10	HUC-12
0601020402	060102040201 (Chilhowee Lake)
	060102040202 (Slick Rock Creek)
	060102040203 (Tellico Lake)
	060102040204 (Citico Creek)
	060102040205 (Ninemile Creek)
0601020403	060102040301 (Upper Abrams Creek)
	060102040302 (Lower Abrams Creek)
0601020404	060102040401 (Tellico River)
	060102040402 (North River)
	060102040403 (Bald River)
	060102040404 (Tellico River)
	060102040405 (Sinkhole Creek)
	060102040406 (Tellico River)
	060102040407 (Ballplay Creek)
	060102040408 (Tellico Creek)
	060102040409 (Notchy Creek)
0601020405	060102040501 (Tellico Lake)
	060102040502 (Baker Creek)
	060102040503 (Tellico Lake)
	060102040504 (Bat Creek)

Table 4-1. HUC-12 Drainage Areas are Nested Within HUC-10 Drainages. NRCS worked with USGS to delineate the HUC-10 and HUC-12 drainage boundaries.

4.2.A. 0601020402 (Little Tennessee River).

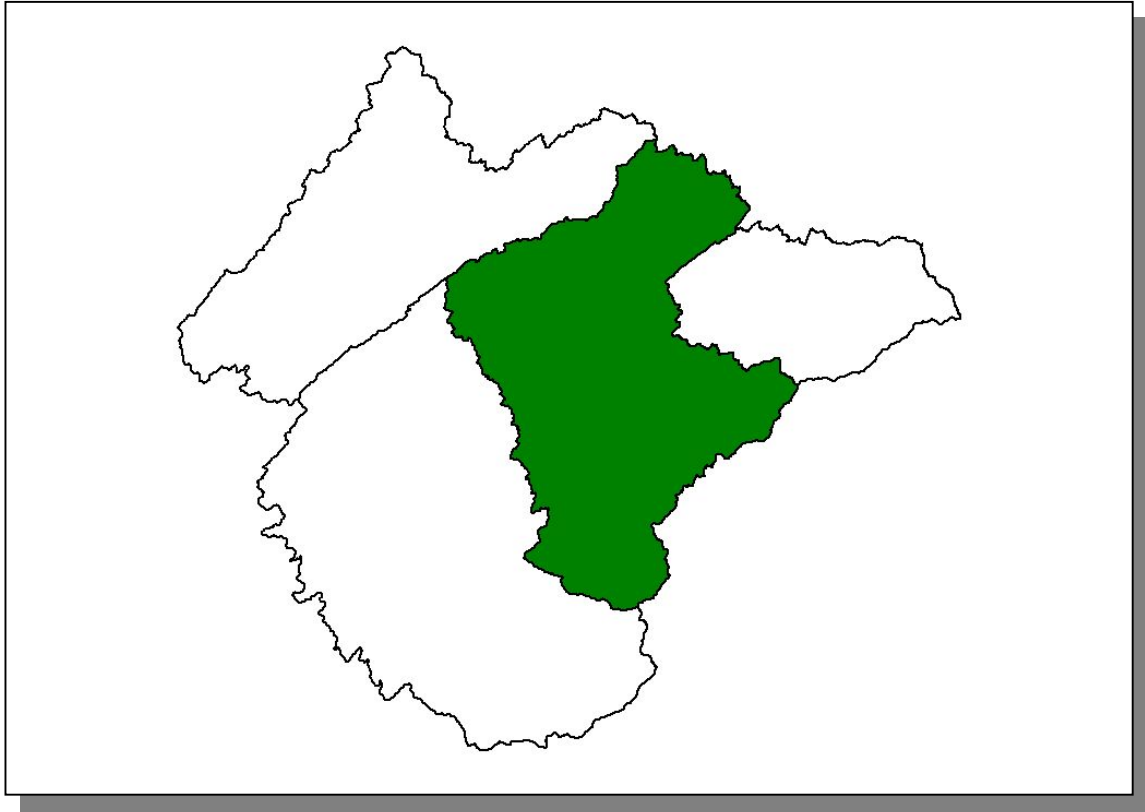


Figure 4-2. Location of Subwatershed 0601020402. All Little Tennessee HUC-10 subwatershed boundaries in Tennessee are shown for reference.

4.2.A.i. General Description.

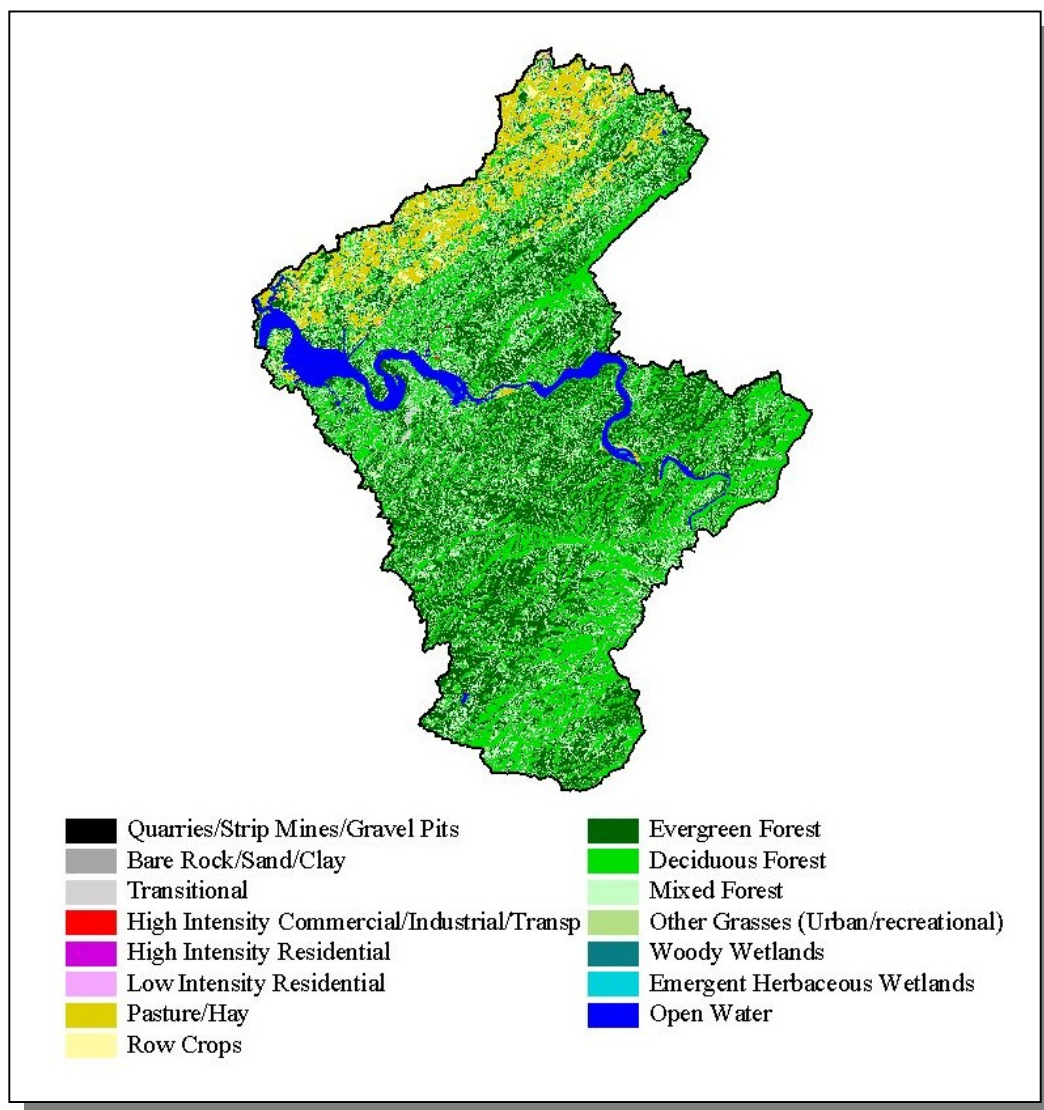


Figure 4-3. Illustration of Land Use Distribution in Subwatershed 0601020402.

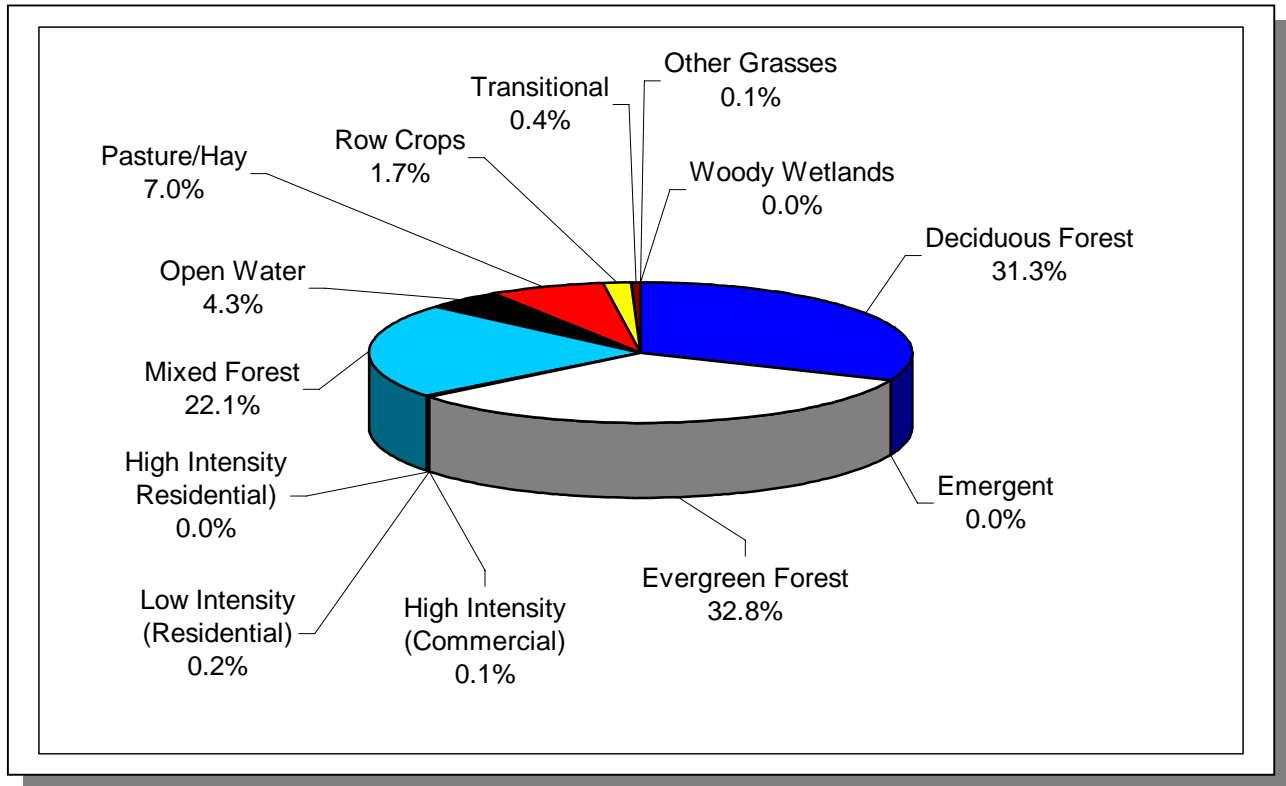


Figure 4-4. Land Use Distribution in Subwatershed 0601020402. More information is provided in Appendix IV.

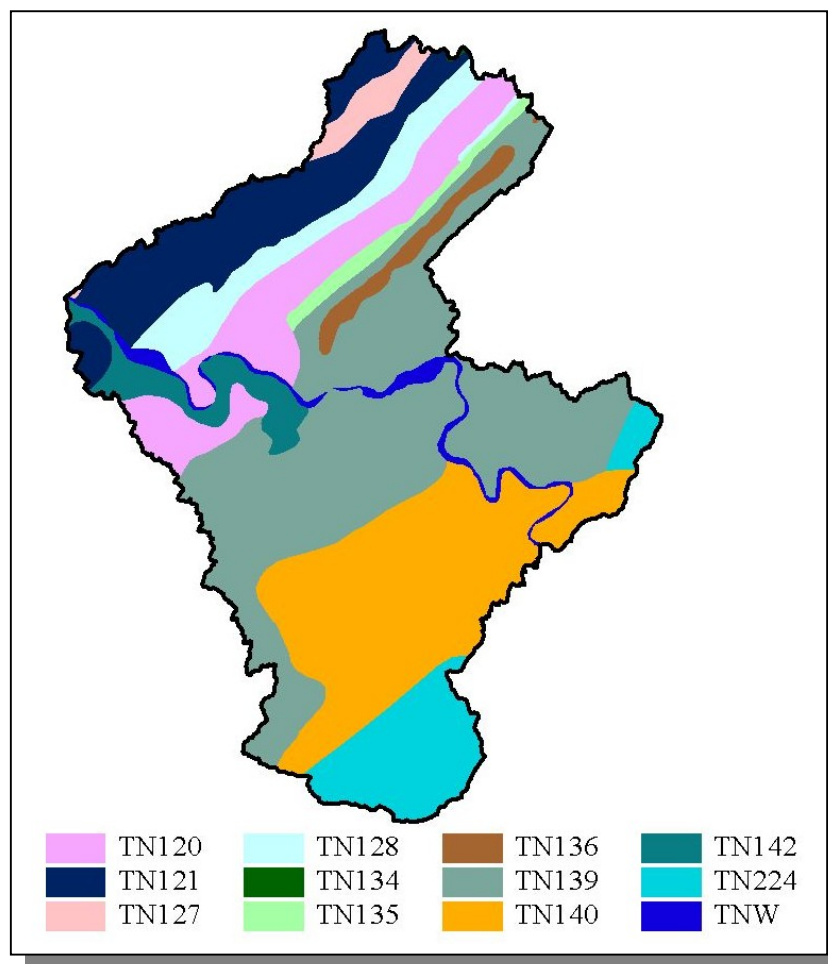


Figure 4-5. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0601020402.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN120	0.00	B	1.68	5.11	Loam	0.27
TN121	0.00	B	1.30	5.21	Loam	0.33
TN127	6.00	C	1.31	5.20	Loam	0.35
TN128	0.00	C	1.30	6.53	Clayey Loam	0.26
TN134	0.00	B	1.38	5.18	Loam	0.31
TN135	0.00	C	1.30	5.84	Loam	0.33
TN136	0.00	B	3.16	5.11	Loam	0.27
TN139	0.00	C	11.84	4.82	Loam	0.20
TN140	0.00	B	3.85	4.85	Sansy Loam	0.21
TN142	0.00	B	2.20	5.78	Loam	0.31
TN224	3.00	B	3.97	5.27	Loam	0.24

Table 4-2. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0601010202. More information is provided in Appendix IV.

County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-1997)
	1990	1997	2000		1990	1997	2000	
Blount	85,969	100,218	105,823	17.56	15,100	17,602	18,587	23.1
Loudoun	31,255	38,245	39,086	0.38	118	145	148	25.4
Monroe	30,541	33,953	38,961	20.48	6,255	6,954	7,980	27.6
Totals	147,765	172,416	183,870		21,473	24,701	26,715	24.4

Table 4-3. Population Estimates in Subwatershed 0601020402.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Vonore	Monroe	601	281	8	271	2

Table 4-4. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0601020402.

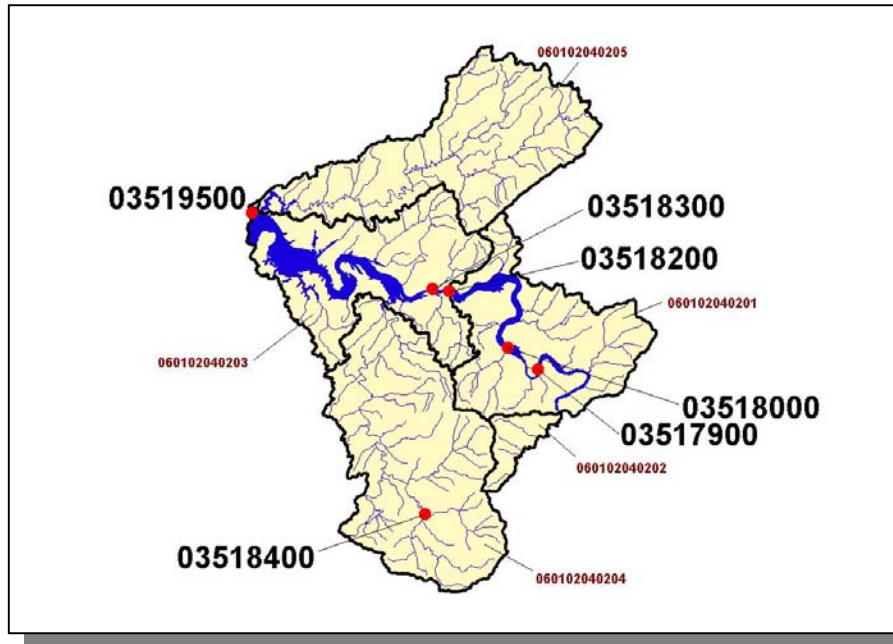


Figure 4-6. Location of Historical Streamflow Data Collection Sites in Subwatershed 0601020402. Subwatershed 060102040201, 060102040202, 060102040203, 060102040204, and 060102040205 boundaries are shown for reference. More information is provided in Appendix IV.

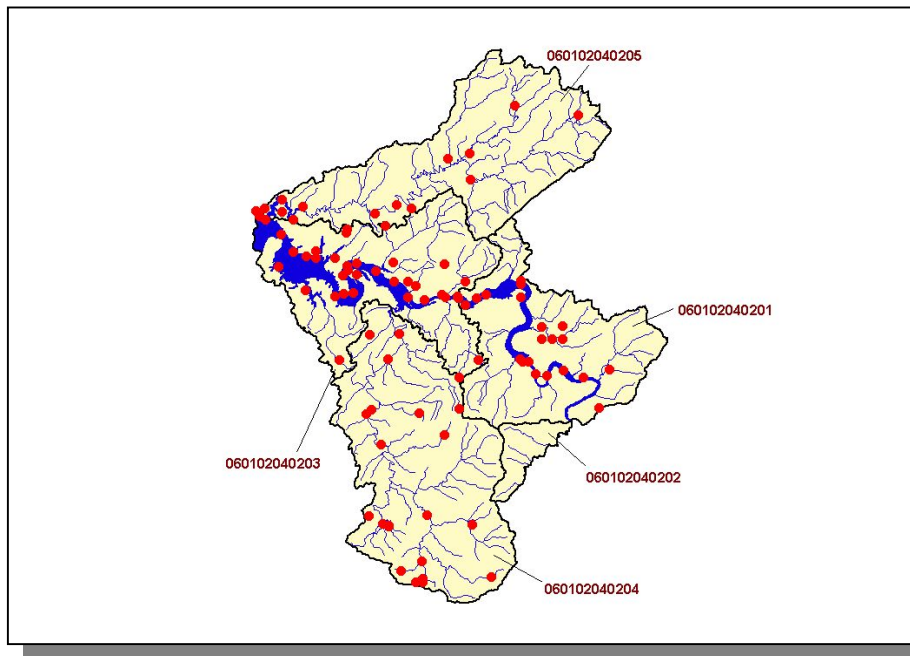


Figure 4-7. Location of STORET Monitoring Sites in Subwatershed 0601020402. Subwatershed 060102040201, 060102040202, 060102040203, 060102040204, and 060102040205 boundaries are shown for reference. More information, including site names and locations, is provided in Appendix IV.

4.2.A.ii. Point Source Contributions.

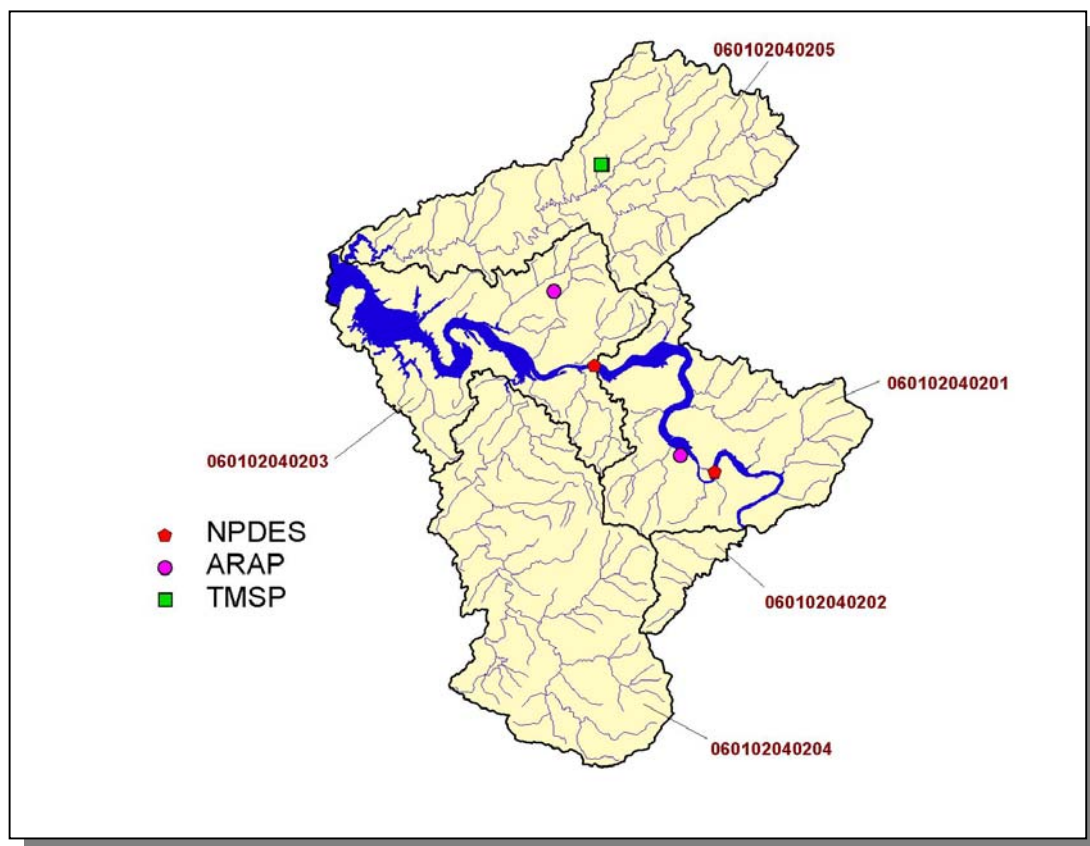


Figure 4-8. Location of Active Point Source Facilities in Subwatershed 0601020402. Subwatershed 060102040201, 060102040202, 060102040203, 0601020404, and 060102040205 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

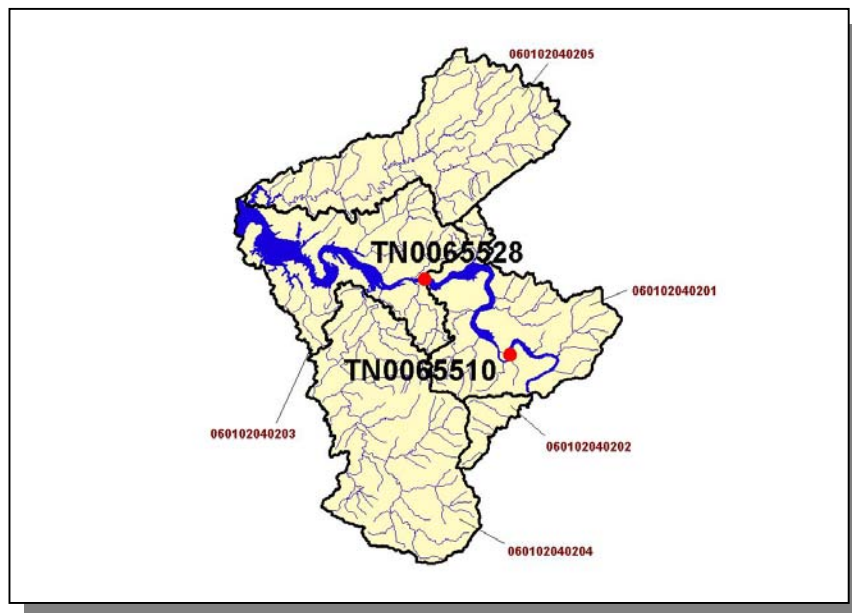


Figure 4-9. Location of NPDES Facilities in Subwatershed 0601020402. Subwatershed 060102040201, 060102040202, 060102040203, 0601020404, and 060102040205 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

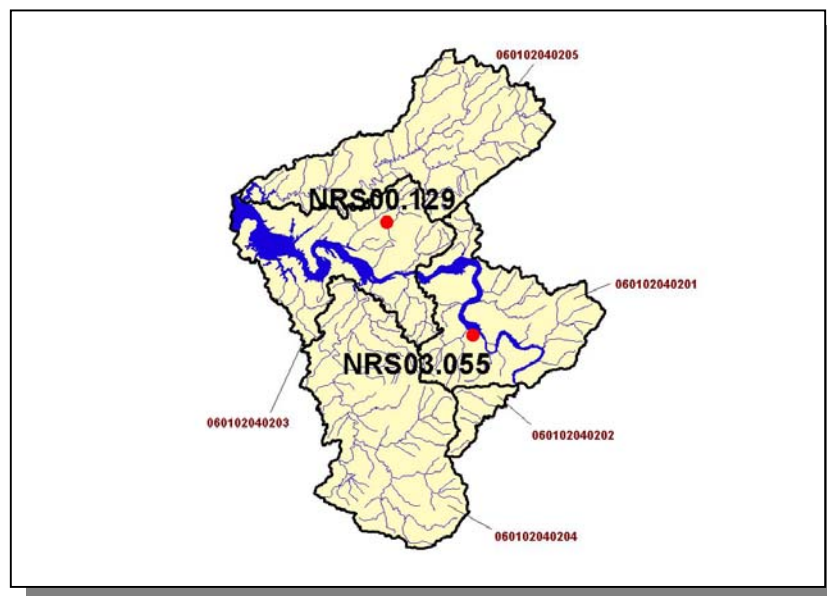


Figure 4-10. Location of ARAP Sites (Individual Permits) in Subwatershed 0601020402. Subwatershed 060102040201, 060102040202, 060102040203, 0601020404, and 060102040205 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

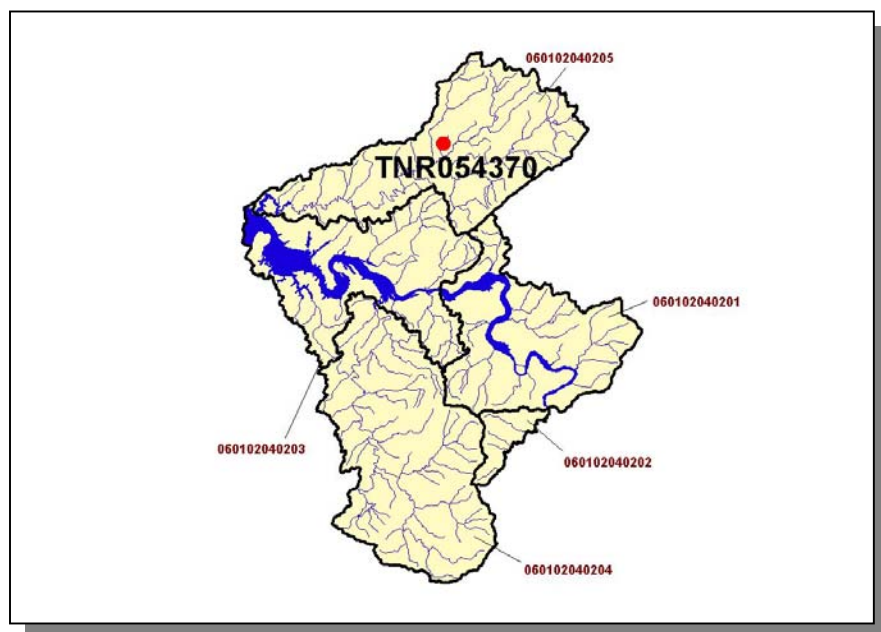


Figure 4-11. Location of TMSF Facilities in Subwatershed 0601020402. Subwatershed 060102040201, 060102040202, 060102040203, 0601020404, and 060102040205 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

4.2.A.ii.a. Dischargers to Water Bodies Listed on the 2002 303(d) List

There is one NPDES facility discharging to water bodies listed on the 2002 303(d) list in Subwatershed 0601020402:

- TN0065510 (ALCOA-Calderwood Power House Hydro Plant) discharges to Little Tennessee River @ RM 43.6

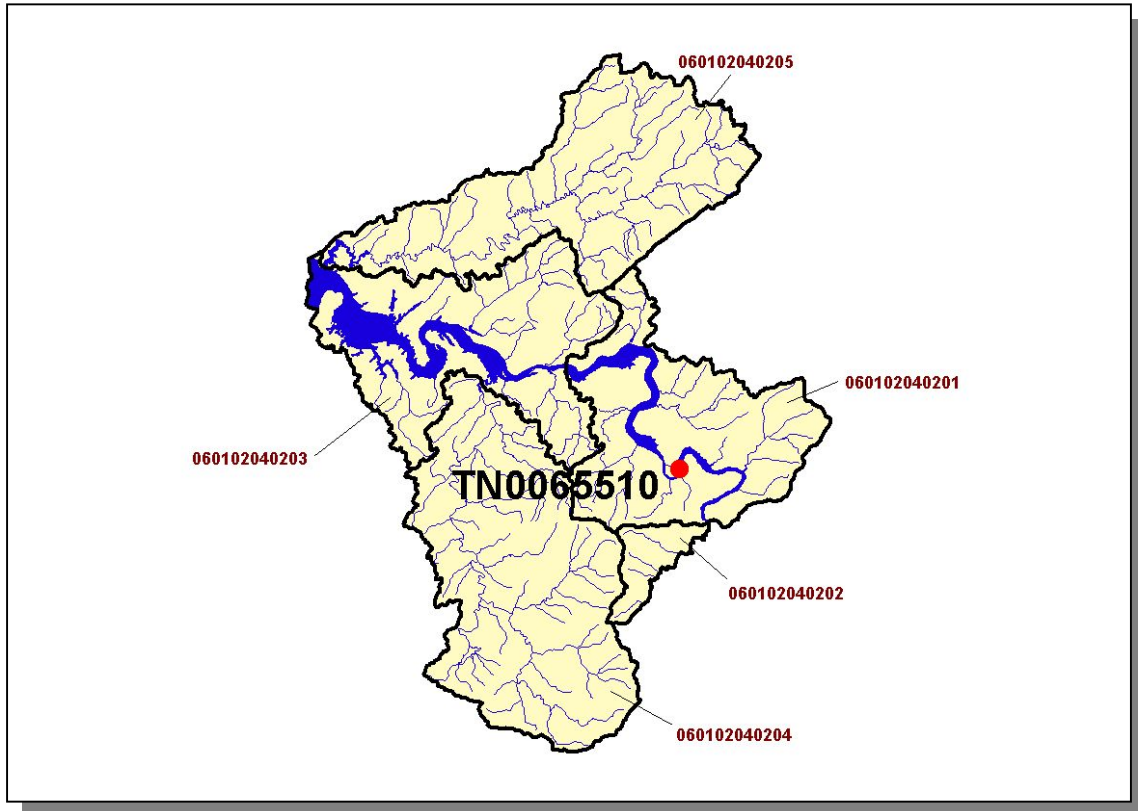


Figure 4-12. Location of NPDES Dischargers to Water Bodies Listed on the 2002 303(d) List in Subwatershed 0601020402. Subwatershed 060102040201, 060102040202, 060102040203, 0601020404, and 060102040205 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0065510	1,200	1,252	1,350	1,200	

Table 4-5. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 2002 303(d) List in Subwatershed 0601020402. Data are in million gallons per day (MGD). Data were obtained from the USGS publication Flow Duration and Low Flows of Tennessee Streams Through 1992 or from permit files.

PCB	SETTLEABLE SOLIDS
X	X

Table 4-6. Parameters Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2002 303(d) List in Subwatershed 0601020402. PCB, Polychlorinated Biphenyl.

4.2.A.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens Sold	Hogs	Sheep
2,899	6,162	425	8	<5	115	79

Table 4-7. Summary of Livestock Count Estimates in Subwatershed 0601020402. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Blount	165.5	69.9	1.8	9.3
Loudon	62.3	62.3	1.1	3.5
Monroe	301.5	279.1	7.4	21.4
Total	529.3	411.3	10.3	34.2

Table 4-8. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 0601020402.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.42
Legumes (Hayland)	0.77
Grass (Hayland)	0.30
Legumes, Grass (Hayland)	0.38
Grass, Forbs, Legumes (Mixed Pasture)	0.32
Forest Land (Not Grazed)	0.00
Forest Land (Grazed)	0.00
Corn (Row Crops)	16.41
Soybeans (Row Crops)	12.82
Tobacco (Row Crops)	4.69
Wheat (Close-Grown Cropland)	5.87
Oats (Close-Grown Cropland)	0.32
Non-Agricultural Land Use	0.00
Other Land in Farms	0.14
Farmsteads and Ranch Headquarters	0.29

Table 4-9. Annual Estimated Total Soil Loss in Subwatershed 0601020402.

4.2.B. 0601020403 (Abrams Creek).

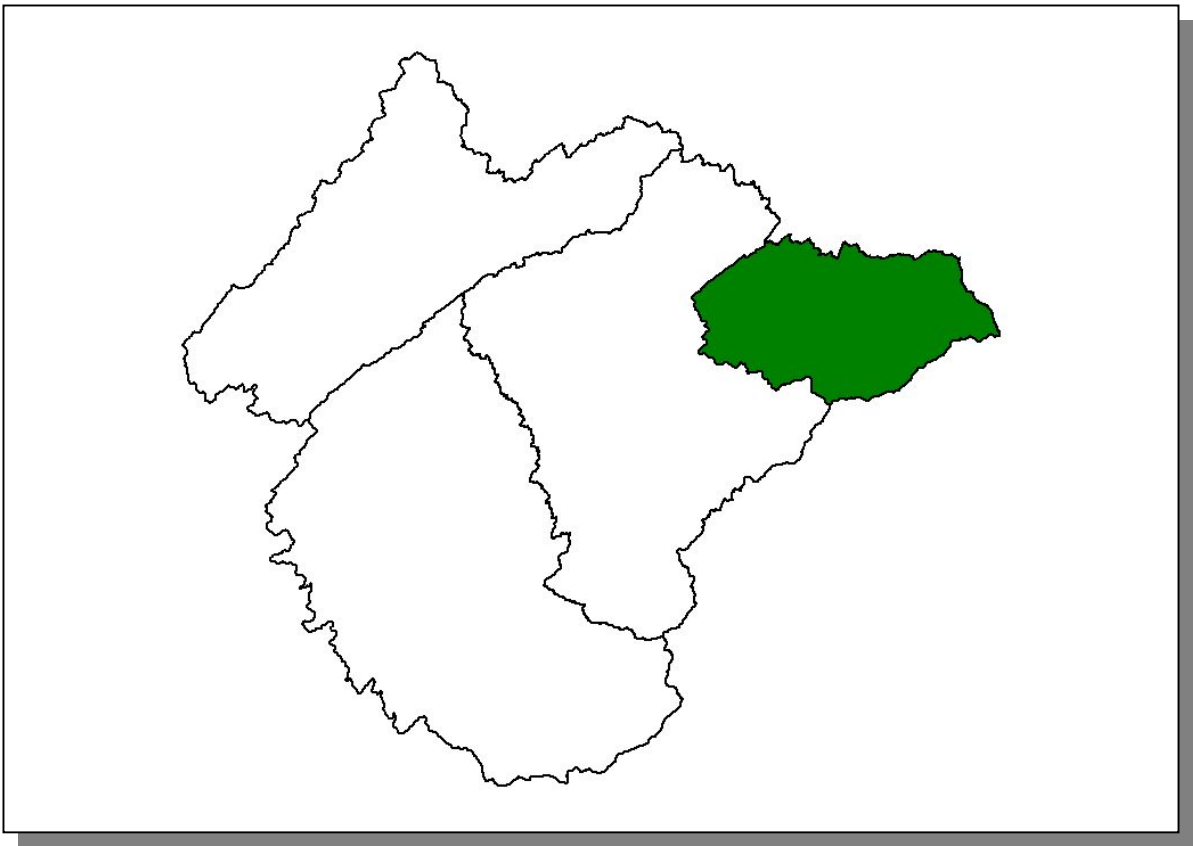


Figure 4-13. Location of Subwatershed 0601020403. All Little Tennessee River Watershed HUC-10 subwatershed boundaries in Tennessee are shown for reference.

4.2.B.i. General Description.

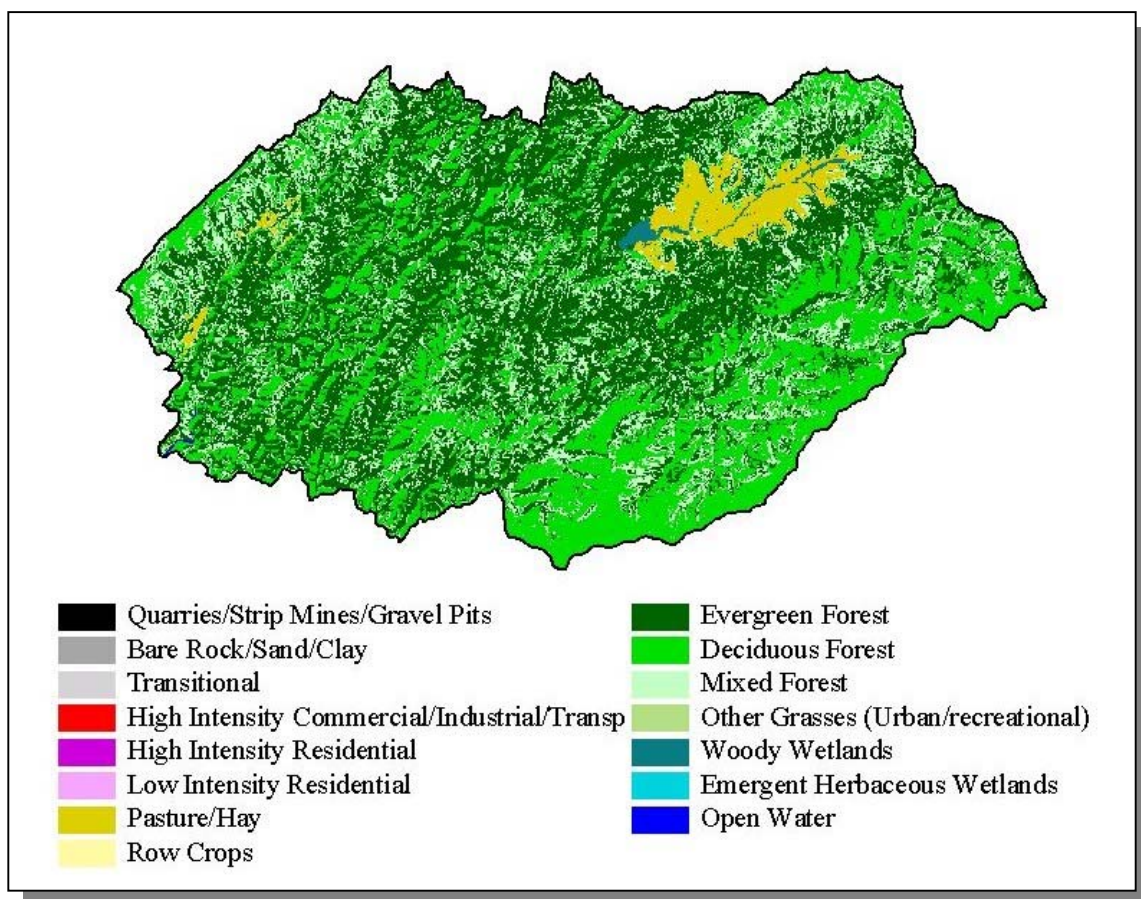


Figure 4-14. Illustration of Land Use Distribution in Subwatershed 0601020403.

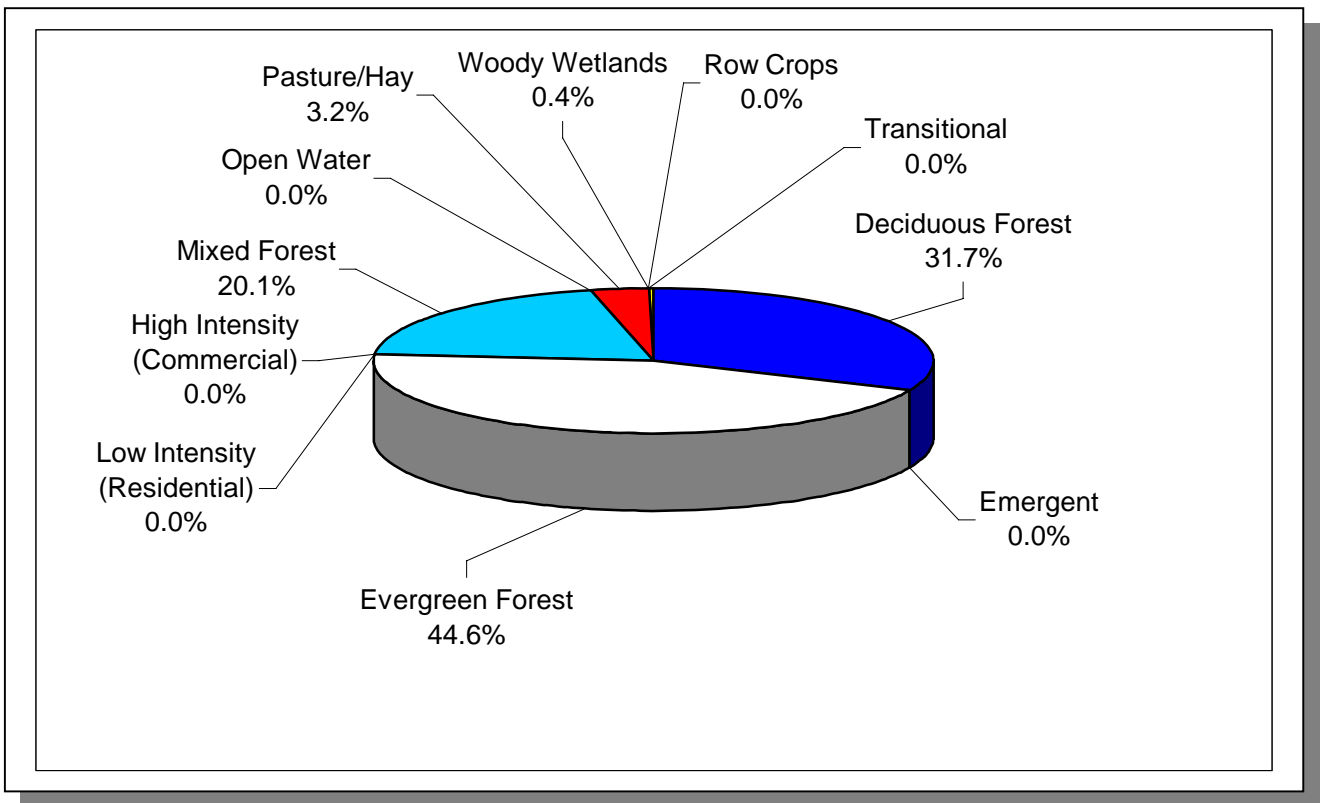


Figure 4-15. Land Use Distribution in Subwatershed 0601020403. More information is provided in Appendix IV.

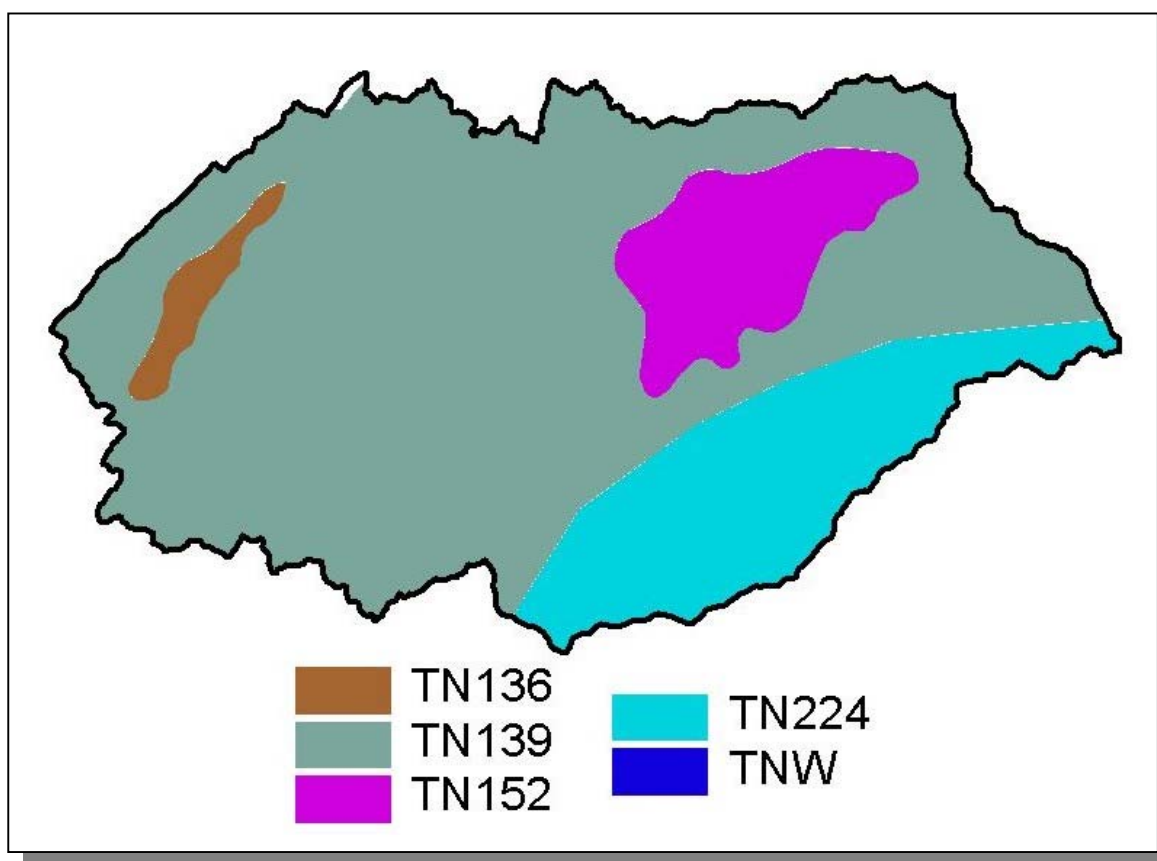


Figure 4-16. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0601020403.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN136	0.00	B	3.16	5.11	Loam	0.27
TN139	0.00	C	11.84	4.82	Loam	0.20
TN152	0.00	B	2.11	5.26	Loam	0.31
TN224	3.00	B	3.97	5.27	Loam	0.24

Table 4-10. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0601020403. More information is provided in Appendix IV.

County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-1997)
	1990	1997	2000		1990	1997	2000	
Blount	85,969	100,218	105,823	15.32	13,171	15,354	16,213	23.1

Table 4-11. Population Estimates in Subwatershed 0601020403.

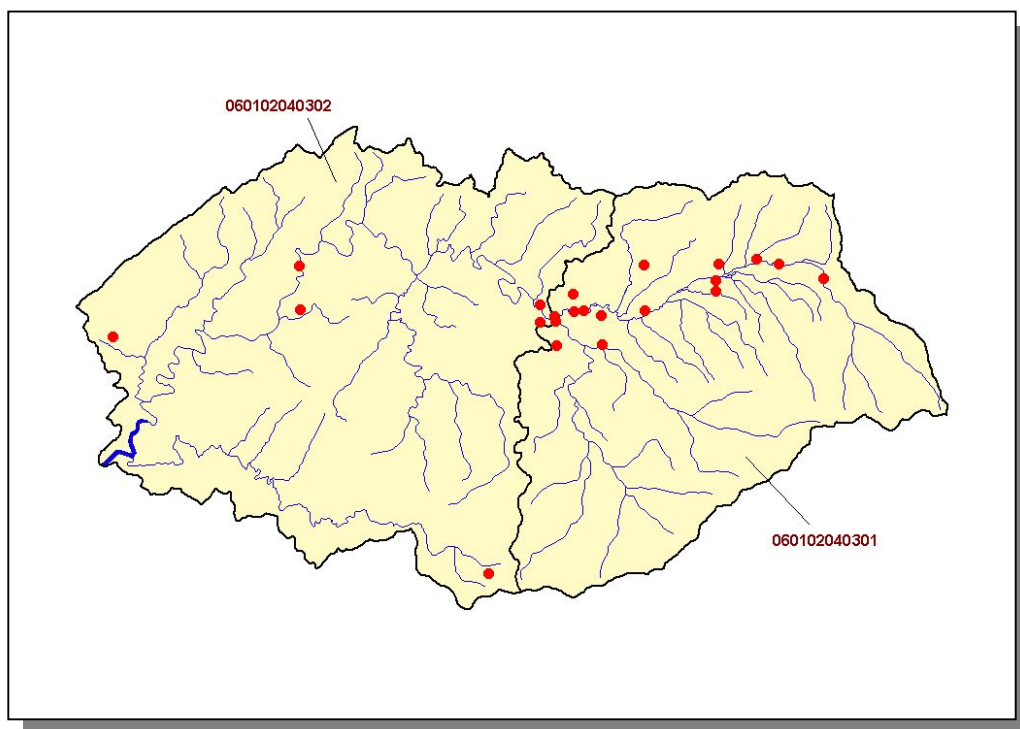


Figure 4-17. Location of STORET Monitoring Sites in Subwatershed 0601020403. Subwatershed 060102040301 and 060102040302 boundaries are shown for reference. More information, including site names and locations, is provided in Appendix IV.

4.2.B.ii. Point Source Contributions.

No point source contributions in this subwatershed.

4.2.B.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens Sold	Hogs	Sheep
506	1,048	58	<5	<5	22	15

Table 4-12. Summary of Livestock Count Estimates in Subwatershed 0601020403. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Blount	165.5	69.9	1.8	9.3

Table 4-13. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 0601020403.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.22
Legumes (Hayland)	0.19
Legumes, Grass (Hayland)	0.06
Grass, Forbs, Legumes (Mixed Pasture)	0.20
Forest Land (Not Grazed)	0.00
Forest Land (Grazed)	0.00
Corn (Row Crops)	15.48
Tobacco (Row Crops)	
Wheat (Close-Grown Cropland)	5.44
Oats (Close-Grown Cropland)	0.32
Non-Agricultural Land Use	0.00
Other Land in Farms	0.14
Farmsteads and Ranch Headquarters	0.29

Table 4-14. Annual Estimated Total Soil Loss in Subwatershed 0601020403.

4.2.C. 0601020404 (Tellico River).

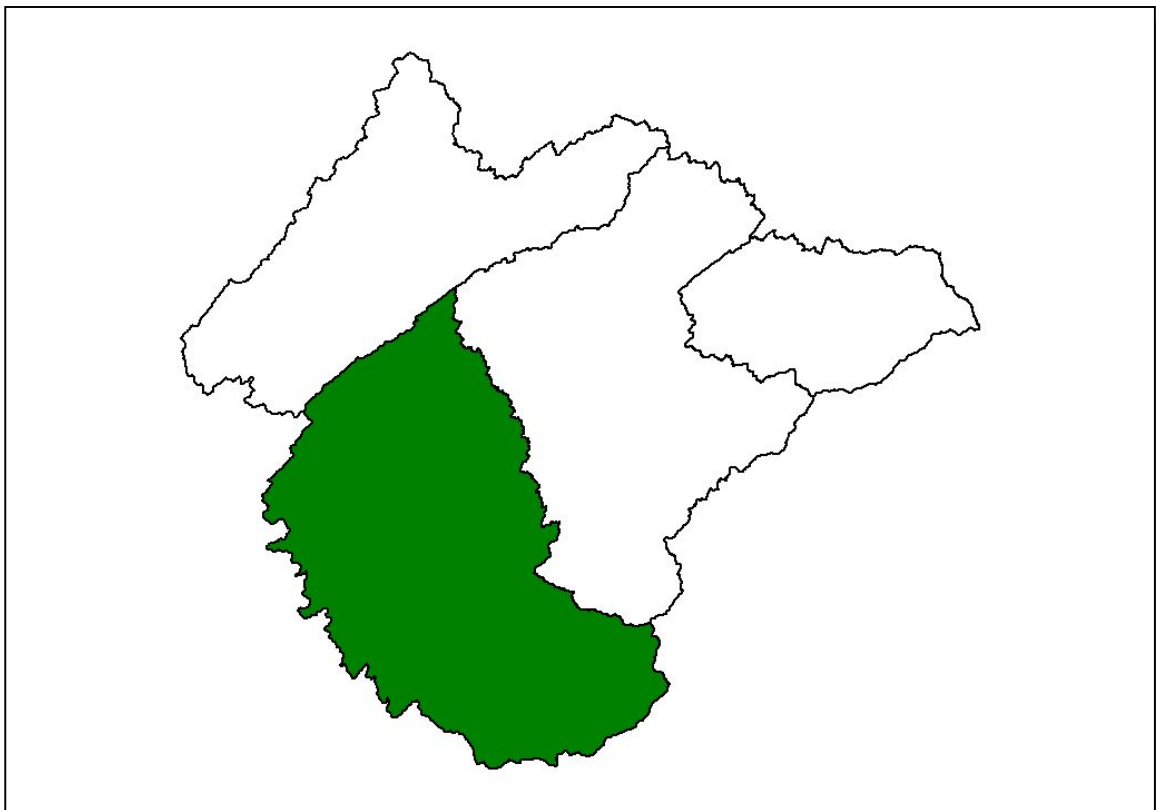


Figure 4-18. Location of Subwatershed 0601020404. All Little Tennessee River HUC-10 subwatershed boundaries in Tennessee are shown for reference.

4.2.C.i. General Description.

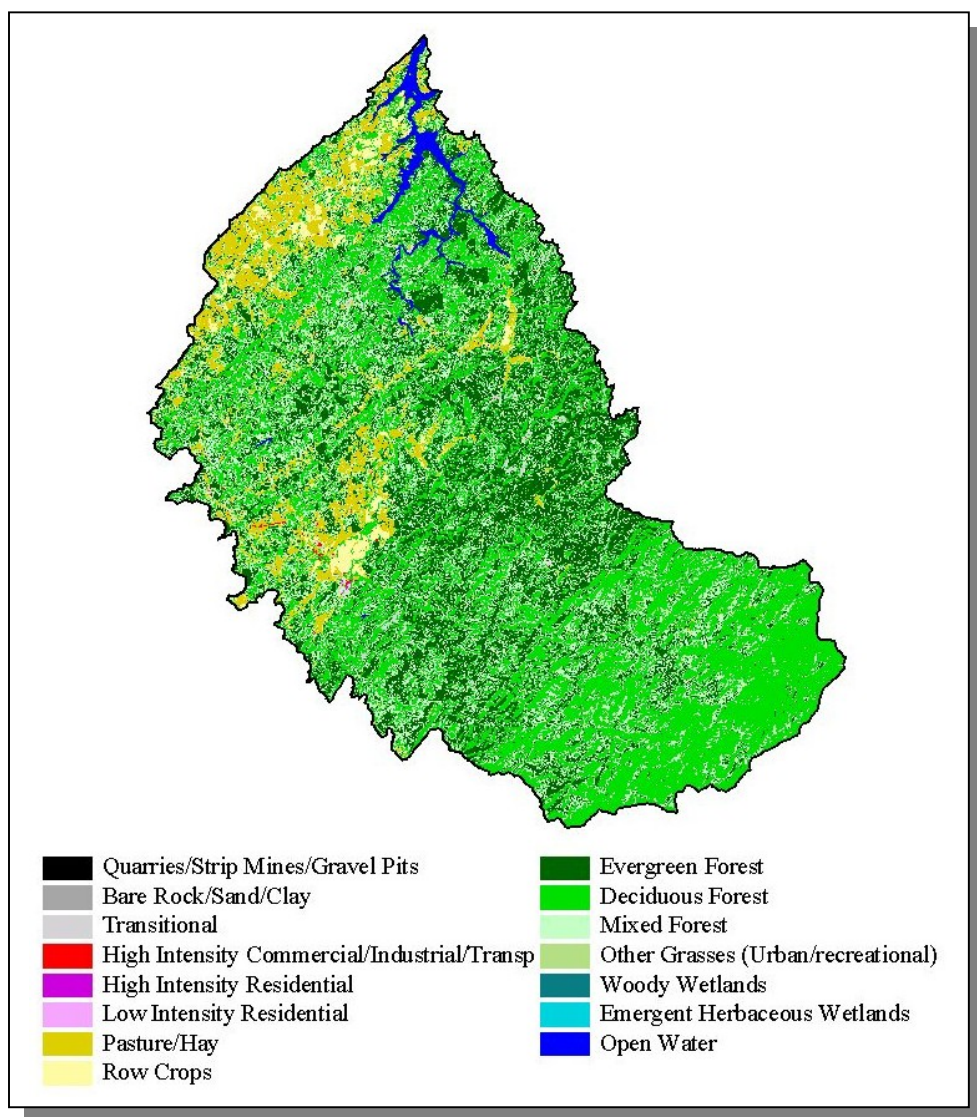


Figure 4-19. Illustration of Land Use Distribution in Subwatershed 0601020404.

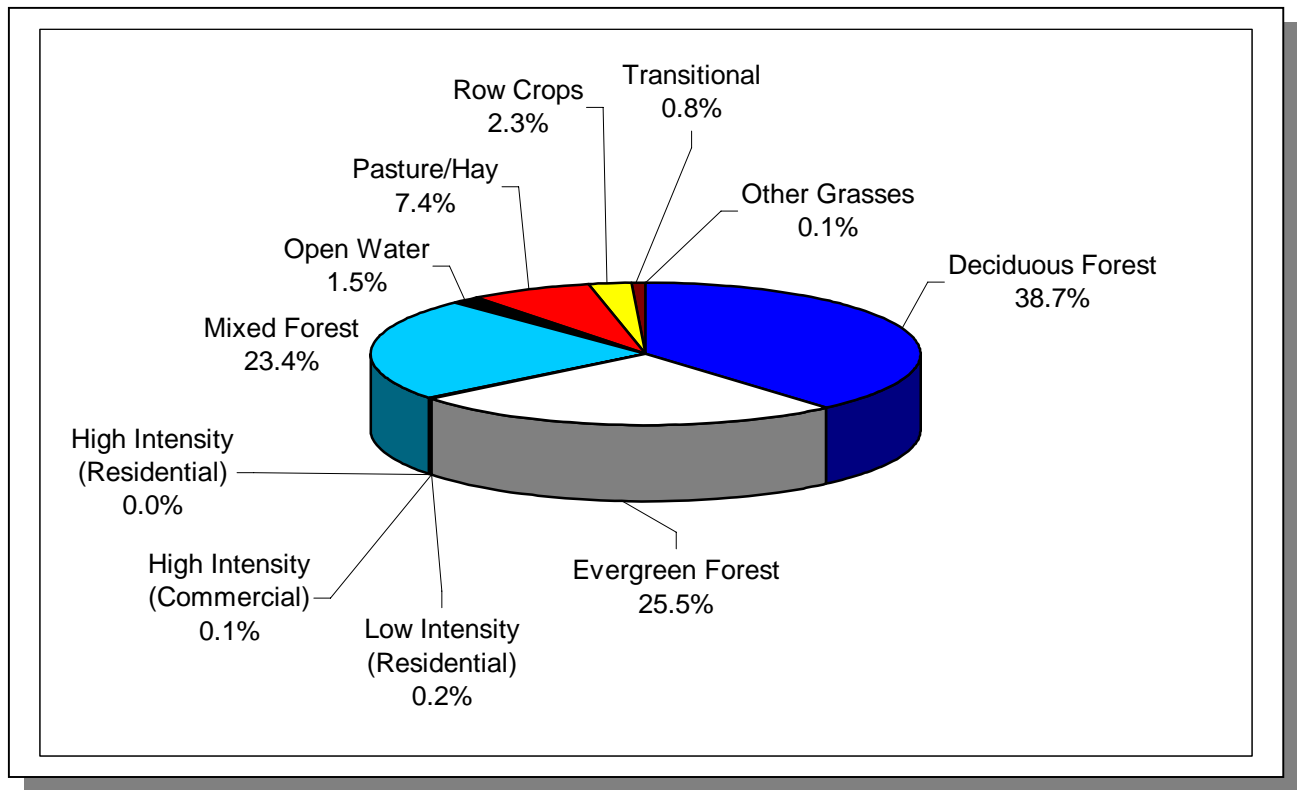


Figure 4-20. Land Use Distribution in Subwatershed 0601020404. More information is provided in Appendix IV.

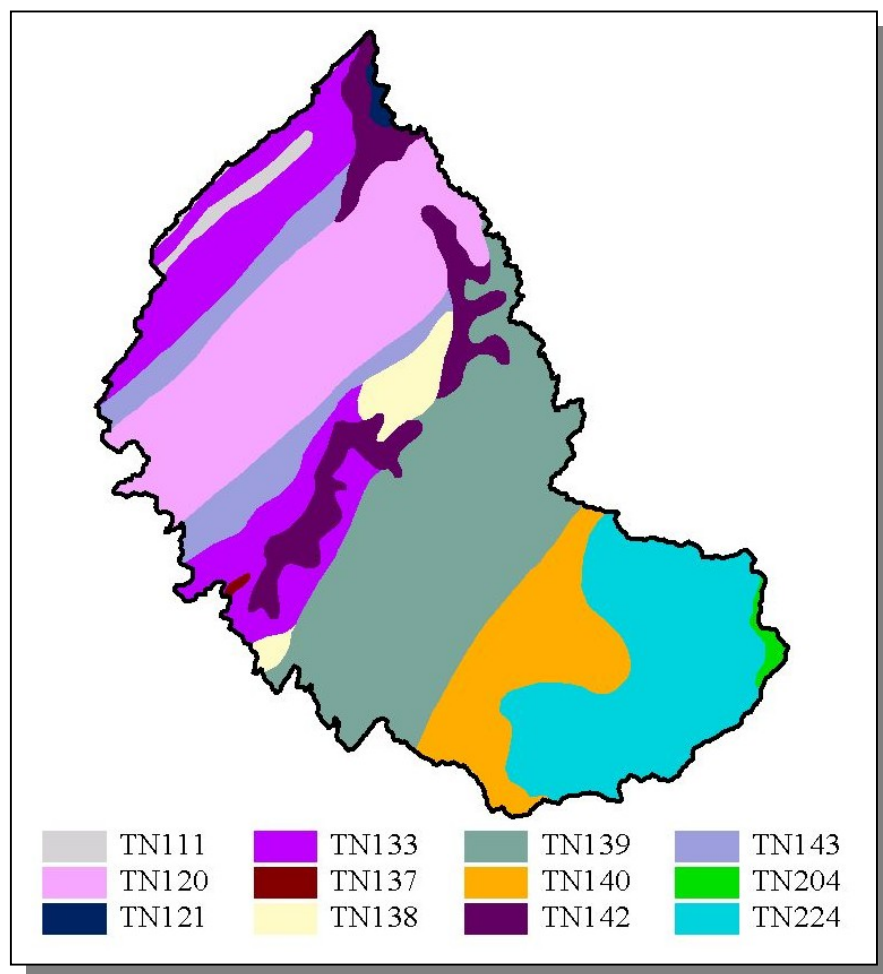


Figure 4-21. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0601020404.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN111	0.00	C	1.41	5.10	Loam	0.34
TN120	0.00	B	1.68	5.11	Loam	0.27
TN121	0.00	B	1.30	5.21	Loam	0.33
TN133	0.00	C	1.35	6.04	Clayey Loam	0.27
TN137	0.00	C	3.41	5.34	Silty Loam	0.26
TN138	0.00	C	2.48	4.26	Sandy Loam	0.22
TN139	0.00	C	11.84	4.82	Loam	0.20
TN140	0.00	B	3.85	4.85	Sandy Loam	0.21
TN142	0.00	B	2.20	5.78	Loam	0.31
TN143	0.00	C	1.22	6.44	Loam	0.32
TN204	0.00	B	3.95	4.80	Sandy Loam	0.19
TN224	3.00	B	3.97	5.27	Loam	0.24

Table 4-15. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0601020404. More information is provided in Appendix IV.

County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-1997)
	1990	1997	2000		1990	1997	2000	
Monroe	30,541	33,953	38,961	41.30	12,612	14,021	16,090	27.6

Table 4-16. Population Estimates in Subwatershed 0601020404.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Madisonville	Monroe	3,137	1,360	893	467	0
Tellico Plains	Monroe	710	370	284	83	3
Vonore	Monroe	601	281	8	271	2
Totals		4,448	2,011	1,185	821	5

Table 4-17. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0513010804.

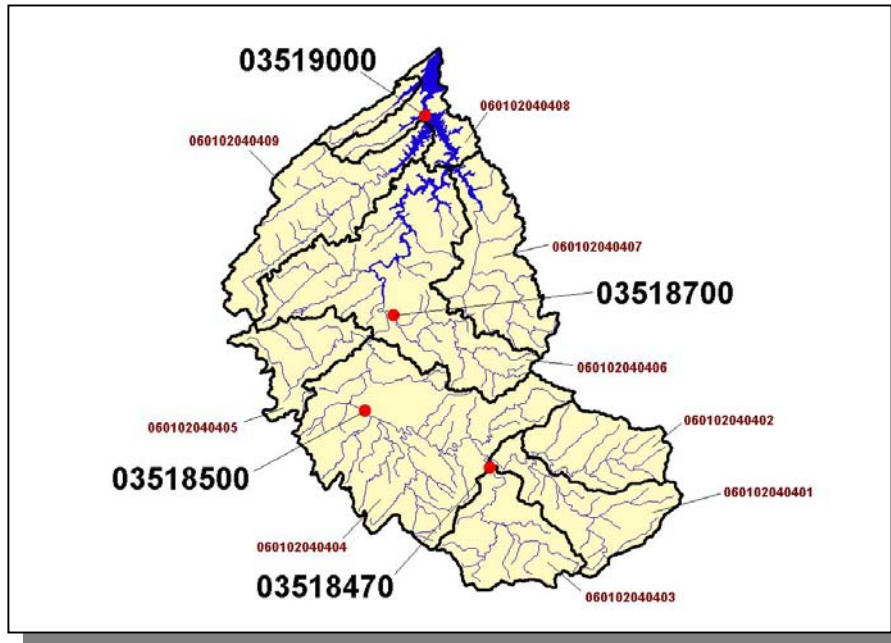


Figure 4-22. Location of Historical Streamflow Data Collection Sites in Subwatershed 0601020404. Subwatershed 060102040401, 060102040402, 060102040403, 060102040404, 060102040405, 060102040406, 060102040407, 060102040408, and 060102040409 boundaries are shown for reference. More information is provided in Appendix IV.

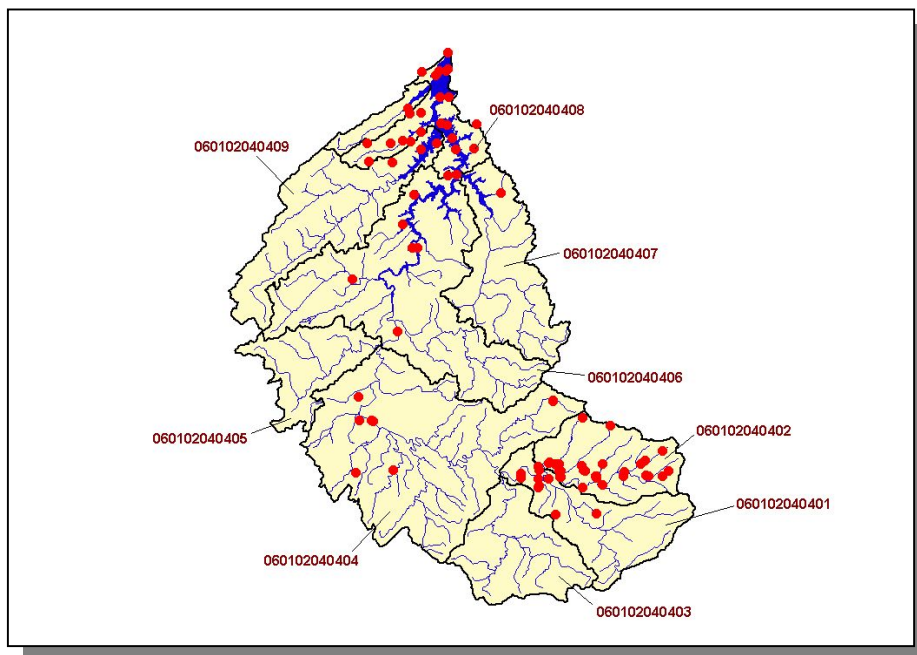


Figure 4-23. Location of STORET Monitoring Sites in Subwatershed 0601020404. Subwatershed 060102040401, 060102040402, 060102040403, 060102040404, 060102040405, 060102040406, 060102040407, 060102040408, and 060102040409 boundaries are shown for reference. More information, including site names and locations, is provided in Appendix IV.

4.2.C.ii. Point Source Contributions.

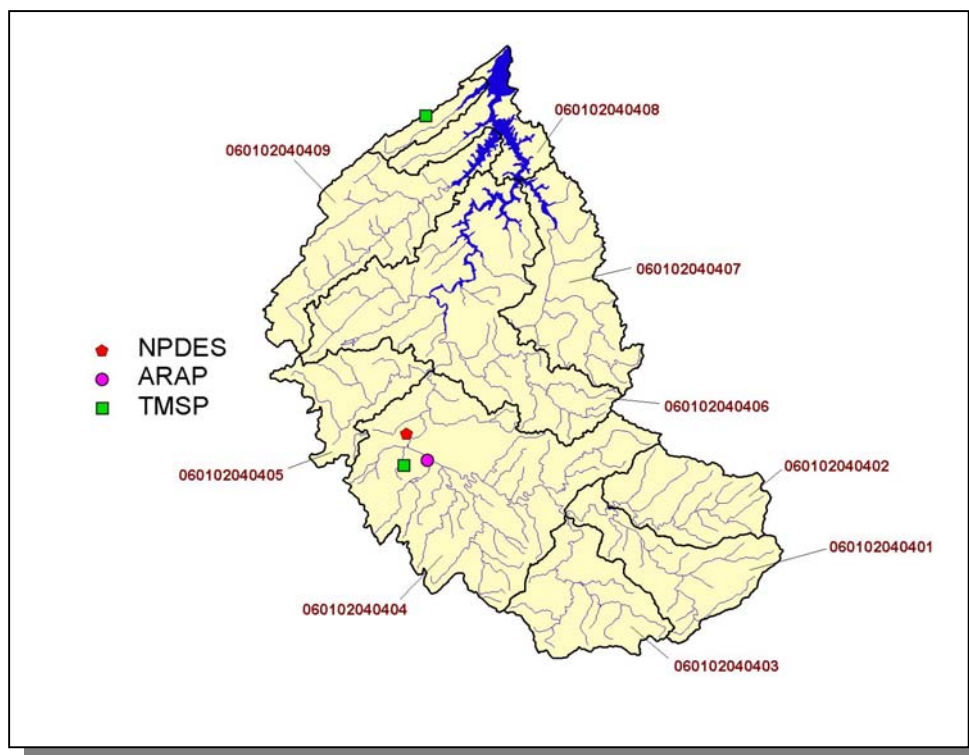


Figure 4-24. Location of Active Point Source Facilities in Subwatershed 0601020404. Subwatershed 060102040401, 060102040402, 060102040403, 060102040404, 060102040405, 060102040406, 060102040407, 060102040408, and 060102040409 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

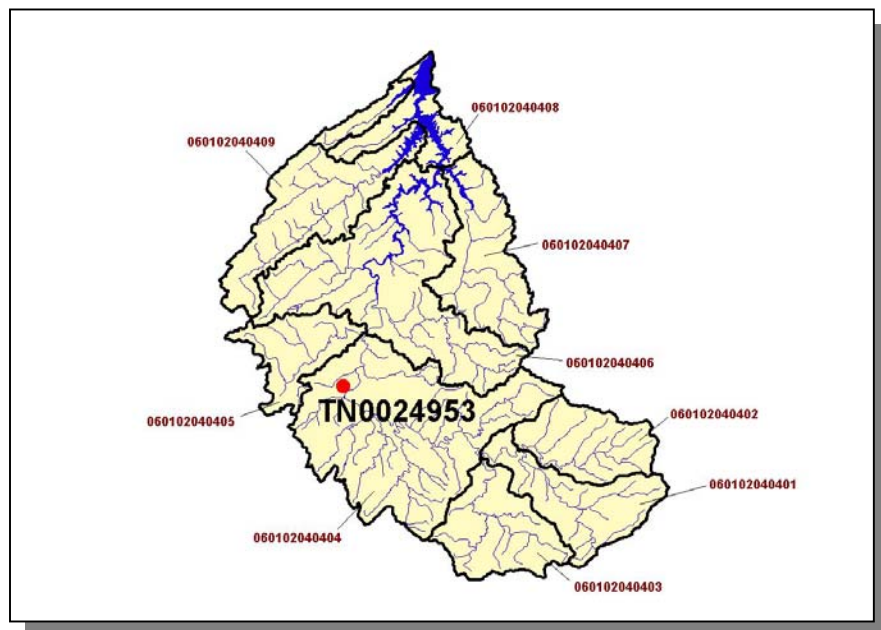


Figure 4-25. Location of NPDES Facilities in Subwatershed 0601020404. Subwatershed 060102040401, 060102040402, 060102040403, 060102040404, 060102040405, 060102040406, 060102040407, 060102040408, and 060102040409 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

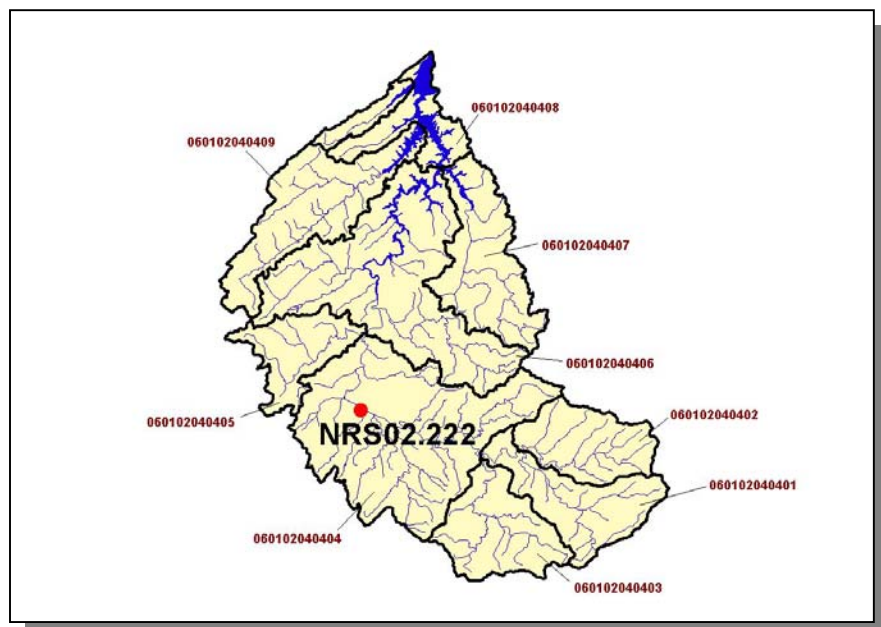


Figure 4-26. Location of ARAP Sites (Individual Permits) in Subwatershed 0601020404. Subwatershed 060102040401, 060102040402, 060102040403, 060102040404, 060102040405, 060102040406, 060102040407, 060102040408, and 060102040409 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

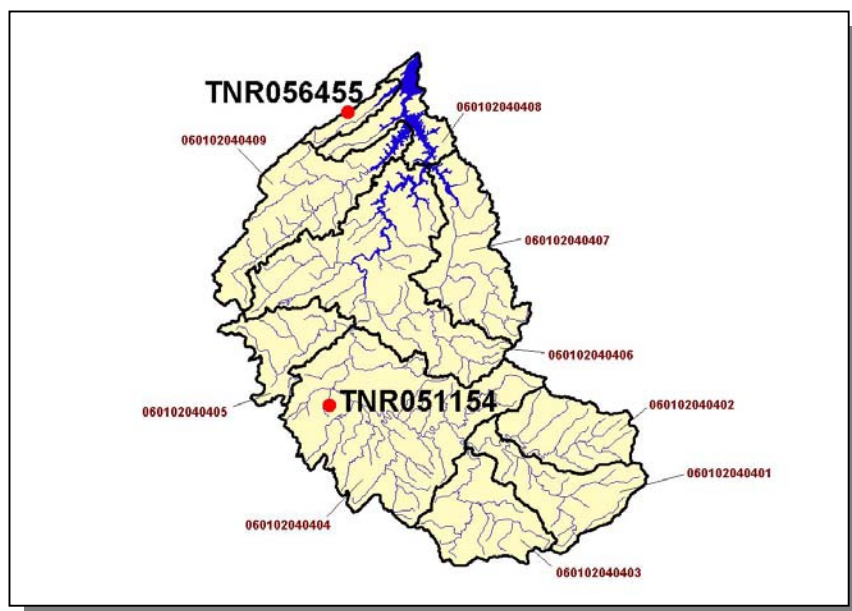


Figure 4-27. Location of TMSF Facilities in Subwatershed 0601020404. Subwatershed 060102040401, 060102040402, 060102040403, 060102040404, 060102040405, 060102040406, 060102040407, 060102040408, and 060102040409 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

4.2.C.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Milk Cow	Cattle	Chickens (Layers)	Chickens Sold	Hogs	Sheep
2,957	1,231	7,619	6	<5	55	23

Table 4-18. Summary of Livestock Count Estimates in Subwatershed 0601020404.
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Monroe	301.5	279.1	7.4	21.4

Table 4-19. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 0601020404.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.56
Grass (Hayland)	0.38
Legumes, Grass (Hayland)	0.60
Grass, Forbs, Legumes (Mixed Pasture)	0.41
Forest Land (Not Grazed)	0.00
Forest Land (Grazed)	0.00
Corn (Row Crops)	17.20
Soybeans (Row Crops)	12.82
Tobacco (Row Crops)	30.54
Wheat (Close-Grown Cropland)	6.20
Non-Agricultural Land Use	0.00
Farmsteads and Ranch Headquarters	0.28

Table 4-20. Annual Soil Loss in Subwatershed 0601020404.

4.2.D. 0601020405 (Little Tennessee River).

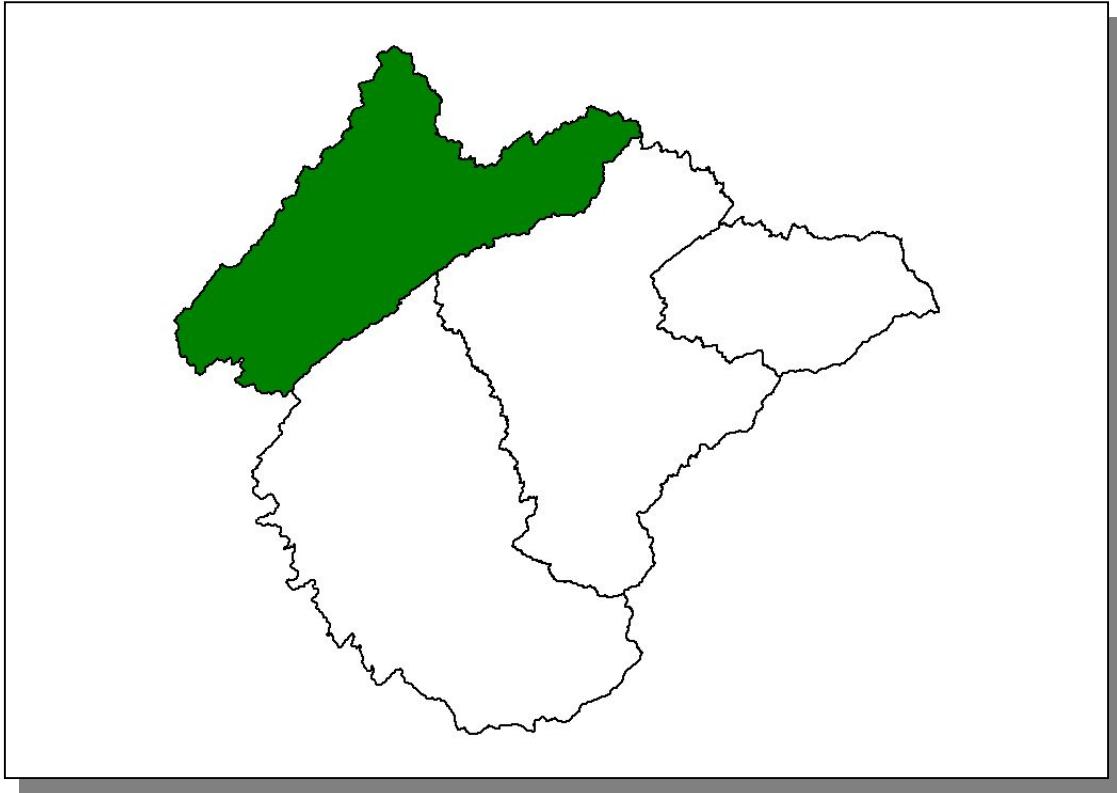


Figure 4-28. Location of Subwatershed 0601020405. All Little Tennessee River HUC-10 subwatershed boundaries in Tennessee are shown for reference.

4.2.D.i. General Description.

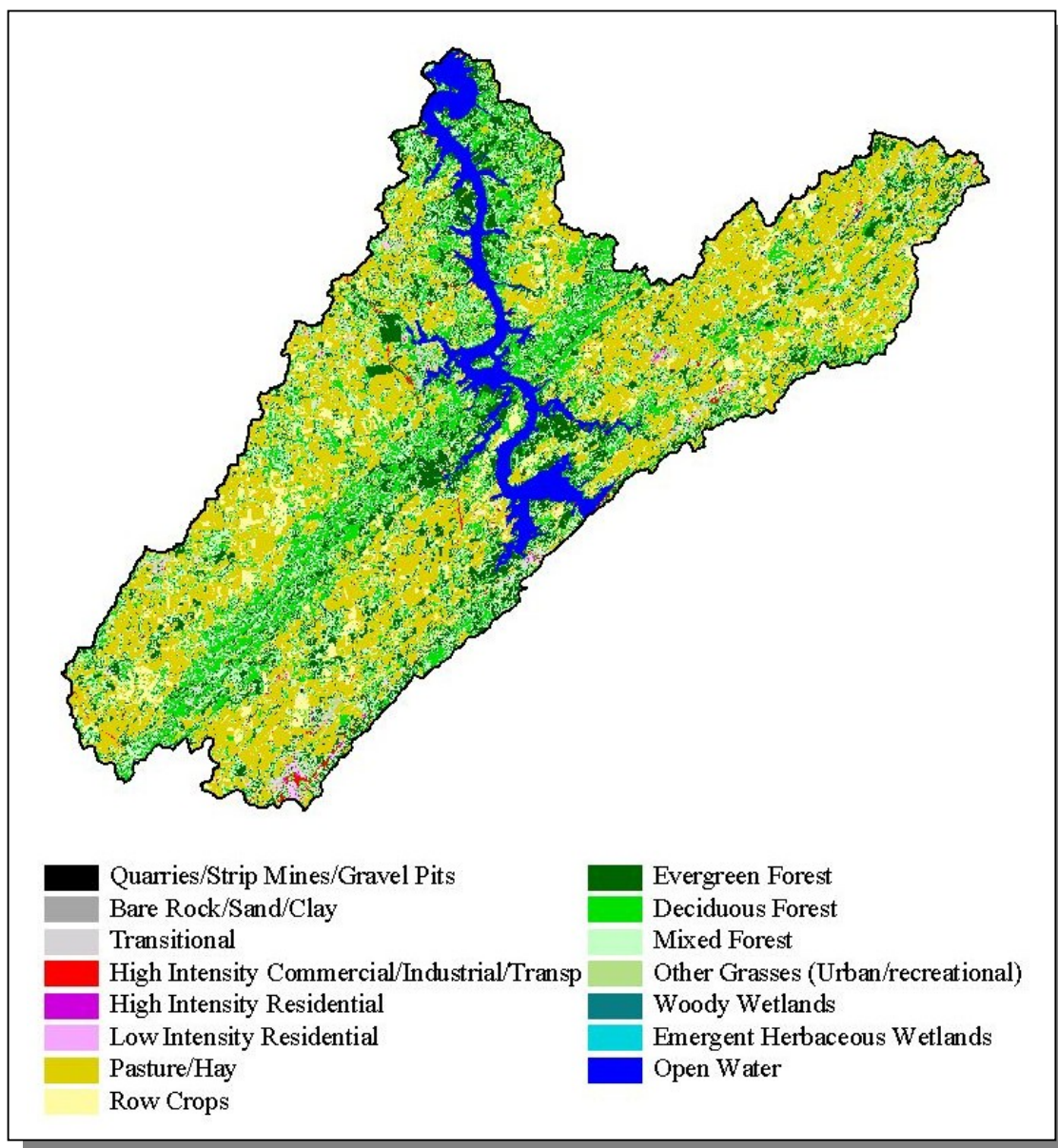


Figure 4-29. Illustration of Land Use Distribution in Subwatershed 0601020405.

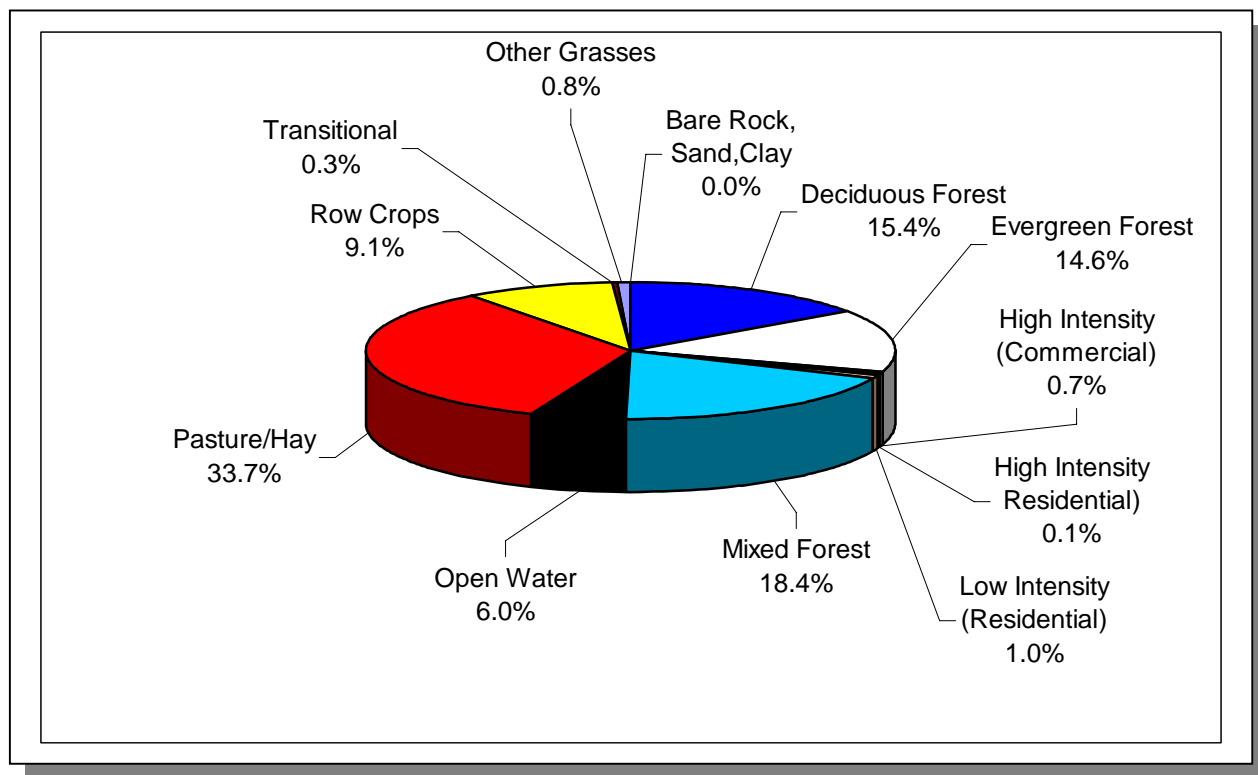


Figure 4-30. Land Use Distribution in Subwatershed 0601020405. More information is provided in Appendix IV.

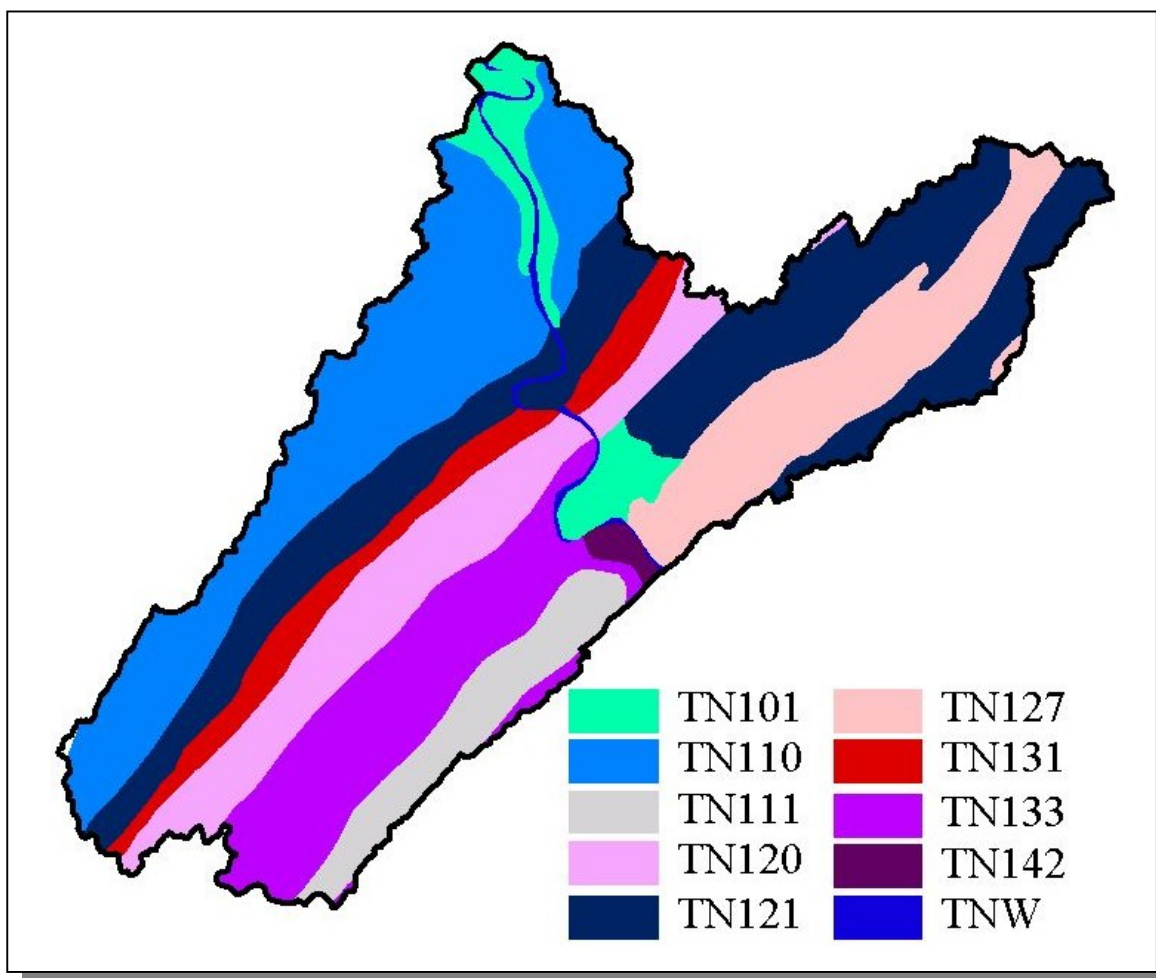


Figure 4-31. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0601020405.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hr)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN101	0.00	B	1.71	5.39	Loam	0.35
TN110	0.00	B	2.22	4.96	Loam	0.31
TN111	0.00	C	1.41	5.10	Loam	0.34
TN120	0.00	B	1.68	5.11	Loam	0.27
TN121	0.00	B	1.30	5.21	Loam	0.33
TN127	6.00	C	1.31	5.20	Loam	0.35
TN131	0.00	C	1.17	4.95	Silty Loam	0.33
TN133	0.00	C	1.35	6.04	Clayey Loam	0.27
TN142	0.00	B	2.20	5.78	Loam	0.31

Table 4-21. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0601020405. More information is provided in Appendix IV.

County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-1997)
	1990	1997	2000		1990	1997	2000	
Blount	85,969	100,218	105,823	4.96	4,268	4,975	5,253	23.1
Loudoun	31,255	38,245	39,086	27.75	8,673	10,613	10,846	25.1
Monroe	30,541	33,953	38,961	12.89	3,938	4,378	5,023	27.6
Totals	147,765	172,416	183,870		16,879	19,966	21,122	25.1

Table 4-22. Population Estimates in Subwatershed 0601020405.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Madisonville	Monroe	3,137	1,360	893	467	0
Sweetwater	Monroe	5,054	2,164	1,598	560	6
Vonore	Monroe	601	281	8	271	2
Greenback	Loudon	600	243	0	243	0
Totals		9,392	4,048	2,499	1,541	8

Table 4-23. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0601020405.

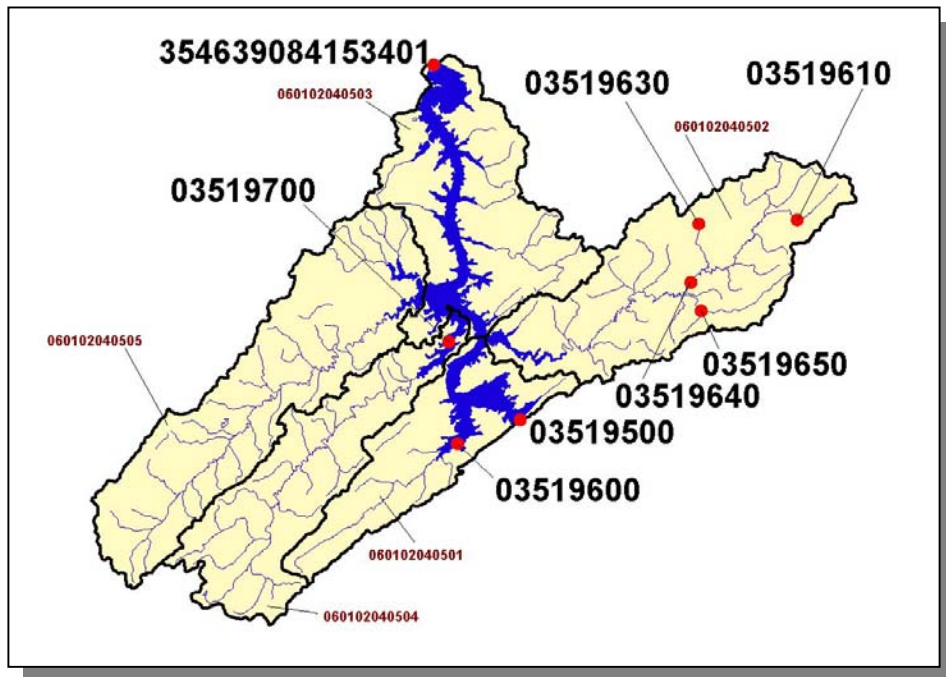


Figure 4-32. Location of Historical Streamflow Data Collection Sites in Subwatershed 0601020405. Subwatershed 060102040501, 060102040502, 060102040503, 060102040504, and 060102040505 boundaries are shown for reference. More information is provided in Appendix IV.

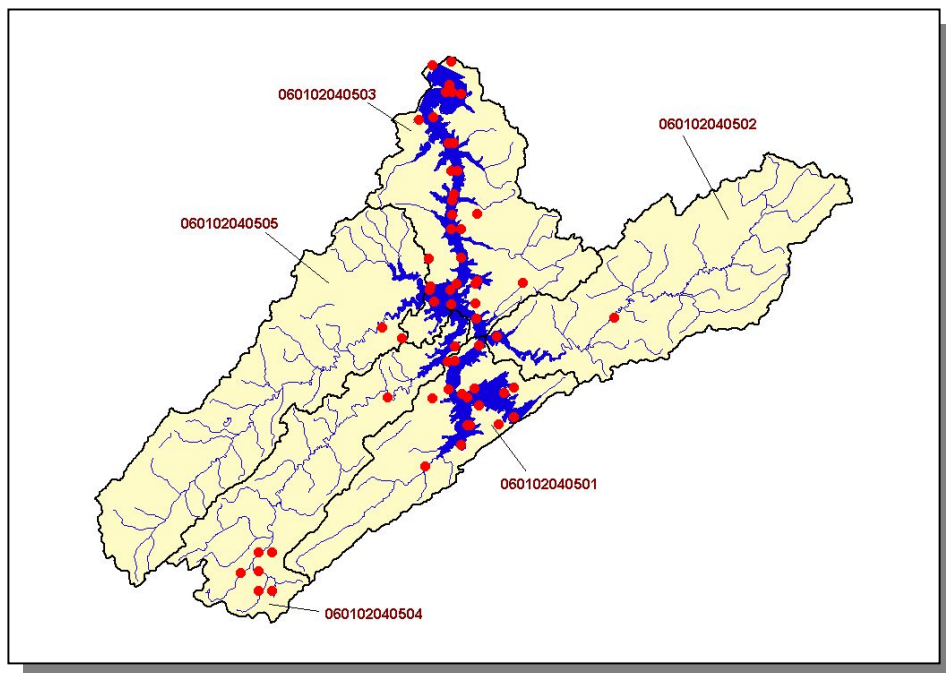


Figure 4-33. Location of STORET Monitoring Sites in Subwatershed 0601020405. Subwatershed 060102040501, 060102040502, 060102040503, 060102040504, and 060102040505 boundaries are shown for reference. More information, including site names and locations, is provided in Appendix IV.

4.2.D.ii. Point Source Contributions.

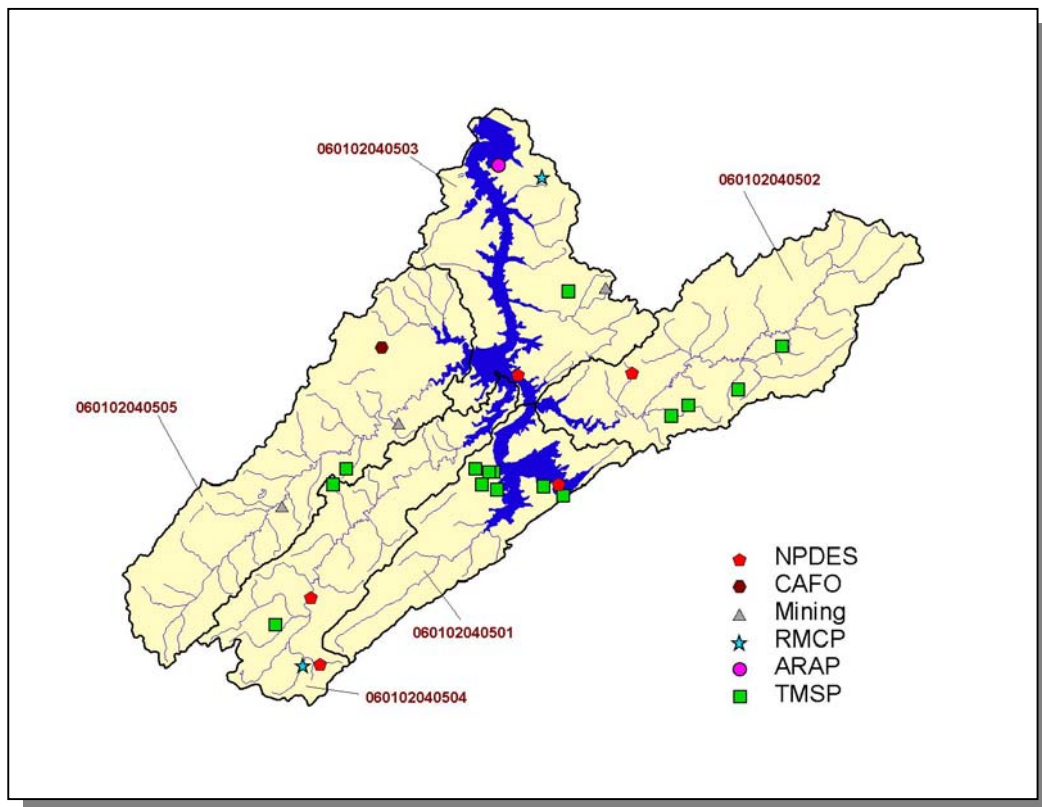


Figure 4-34. Location of Active Point Source Facilities in Subwatershed 0601020405. Subwatershed 060102040501, 060102040502, 060102040503, 060102040504, and 060102040505 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

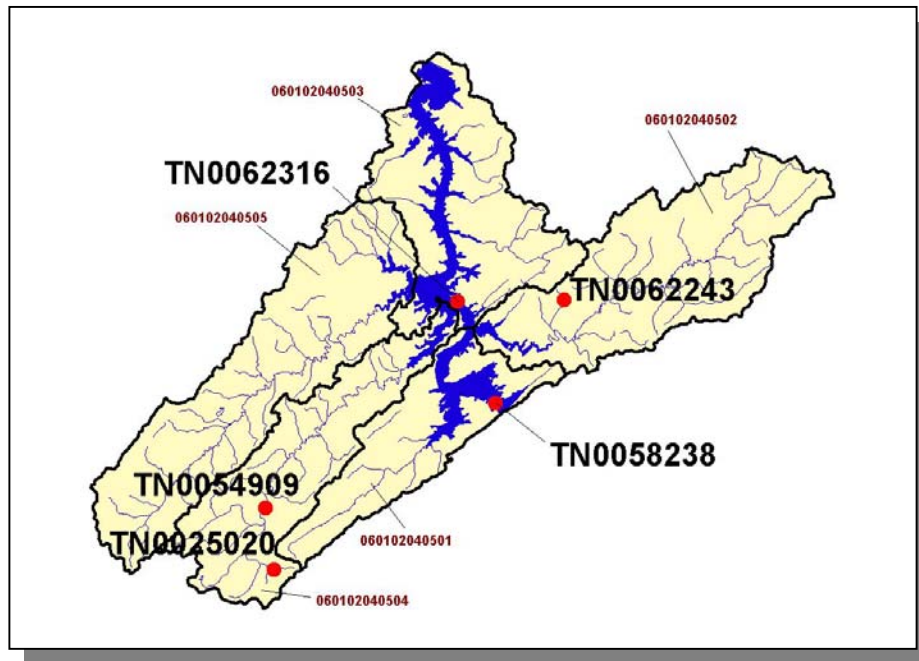


Figure 4-35. Location of NPDES Facilities in Subwatershed 0601020405. Subwatershed 060102040501, 060102040502, 060102040503, 060102040504, and 060102040505 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

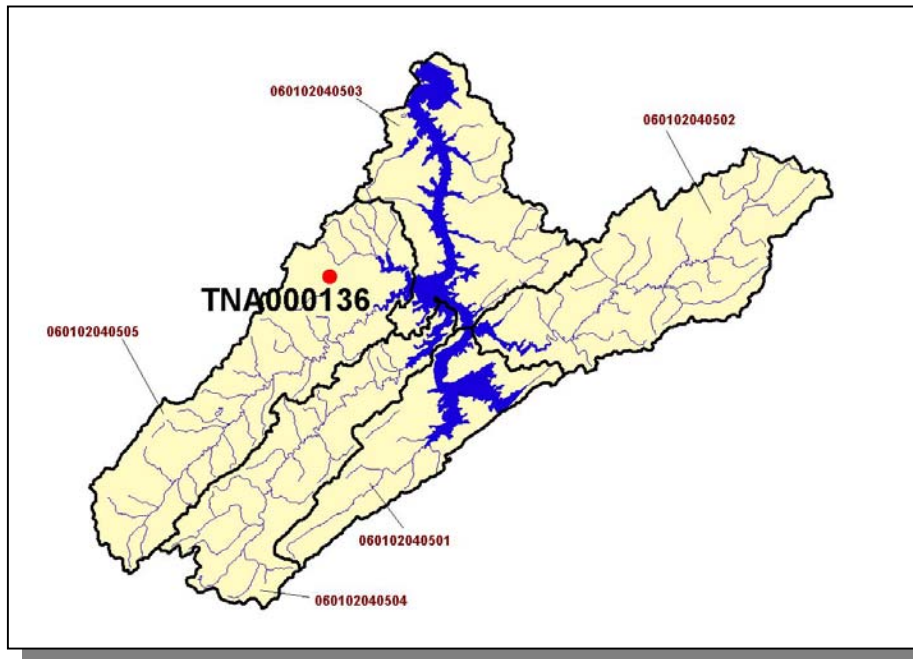


Figure 4-36. Location of Concentrated Animal Feeding Operations (CAFO) in Subwatershed 0601020405. Subwatershed 0601020405, 0601020405, 0601020405, 0601020405, and 0601020405 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

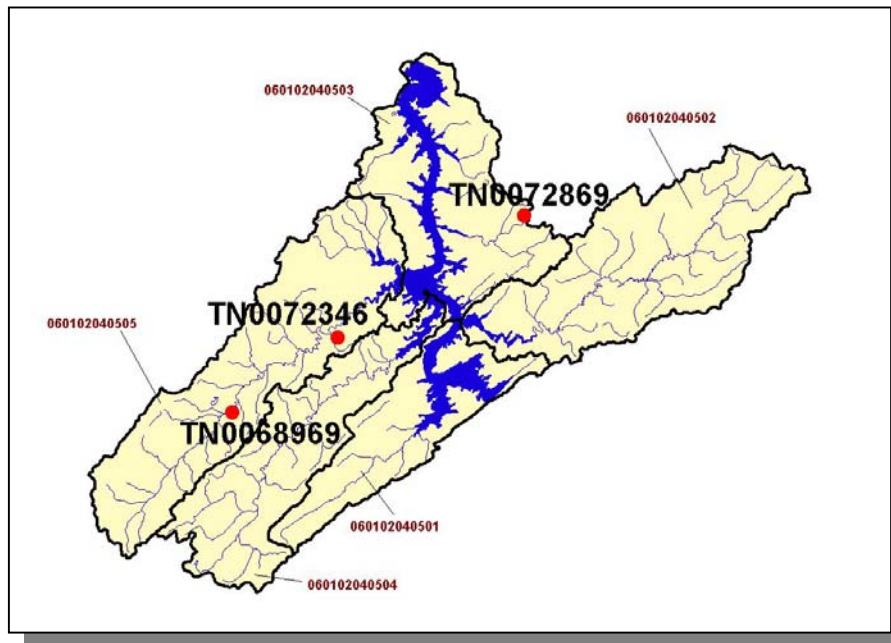


Figure 4-37. Location of Active Mining Facilities in Subwatershed 0601020405. Subwatershed 060102040501, 060102040502, 060102040503, 060102040504, and 060102040505 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

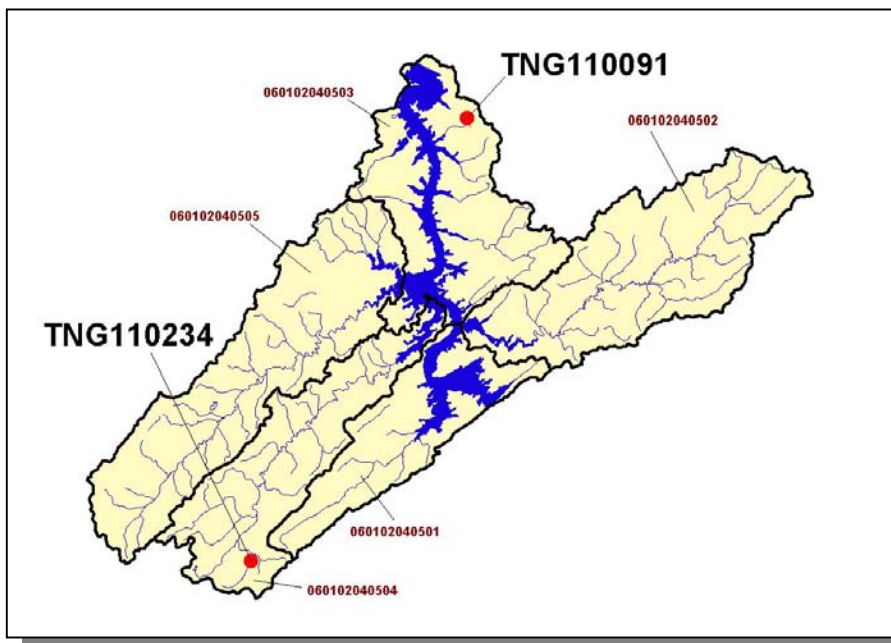


Figure 4-38. Location of Ready Mix Concrete Plants in Subwatershed 0601020405. Subwatershed 060102040501, 060102040502, 060102040503, 060102040504, and 060102040505 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

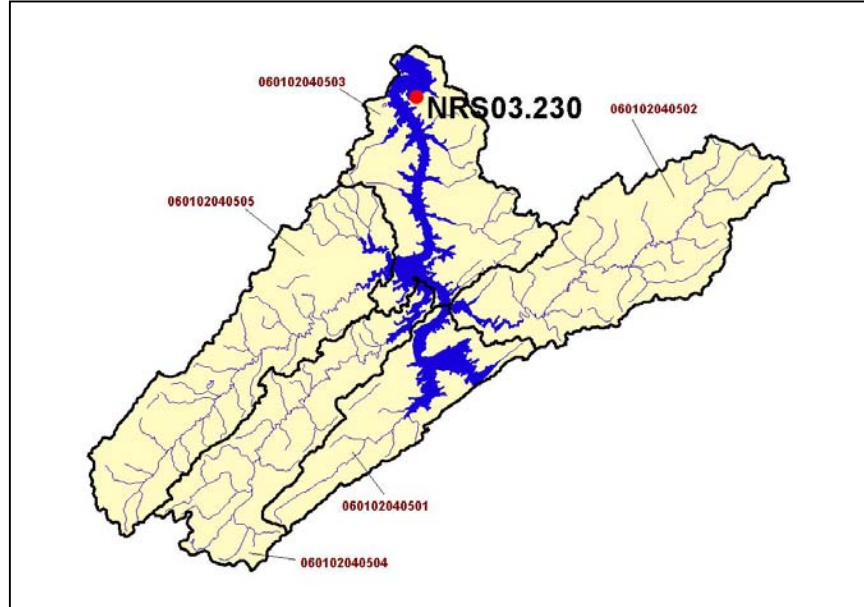


Figure 4-39. Location of ARAP Sites (Individual Permits) in Subwatershed 0601020405. Subwatershed 0601020405, 0601020405, 0601020405, 0601020405, and 0601020405 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

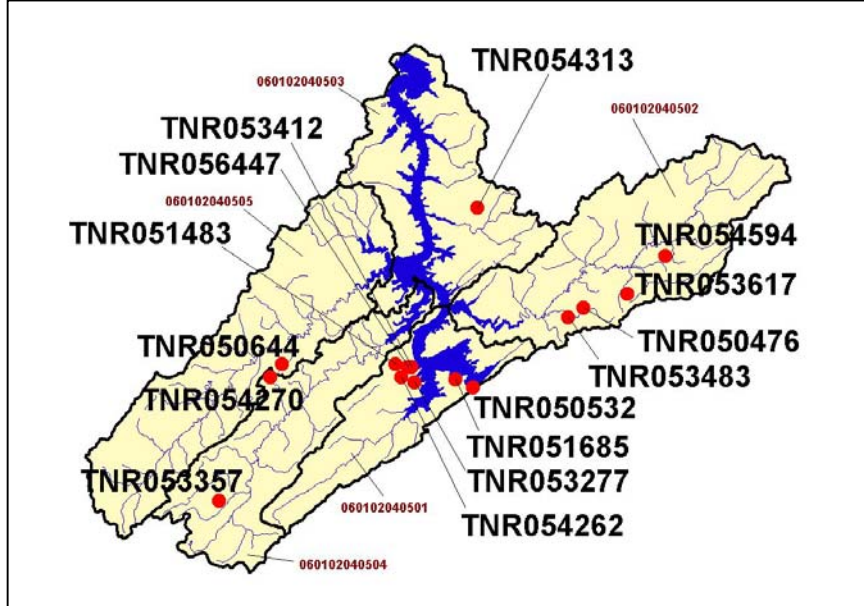


Figure 4-40. Location of TMSP Facilities in Subwatershed 0601020405. Subwatershed 060102040501, 060102040502, 060102040503, 060102040504, and 060102040505 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

4.2.D.ii.a. Dischargers to Water Bodies Listed on the 2002 303(d) List

There are four NPDES facilities discharging to water bodies listed on the 2002 303(d) list in Subwatershed 0601020405:

- TN0058238 (Niles ferry Wastewater Treatment Facility) discharges to Little Tennessee River @ RM 18.6
- TN0062316 (Foothills Pointe Owners Association) discharges to Tellico reservoir (Little Tennessee River) @ RM 13.4
- TN0025020 (Madisonville STP) Discharges to Bat Creek @ RM 19.3
- TN0054909 (Hiwasee College STP) discharges to Bat Creek @ RM 16.4

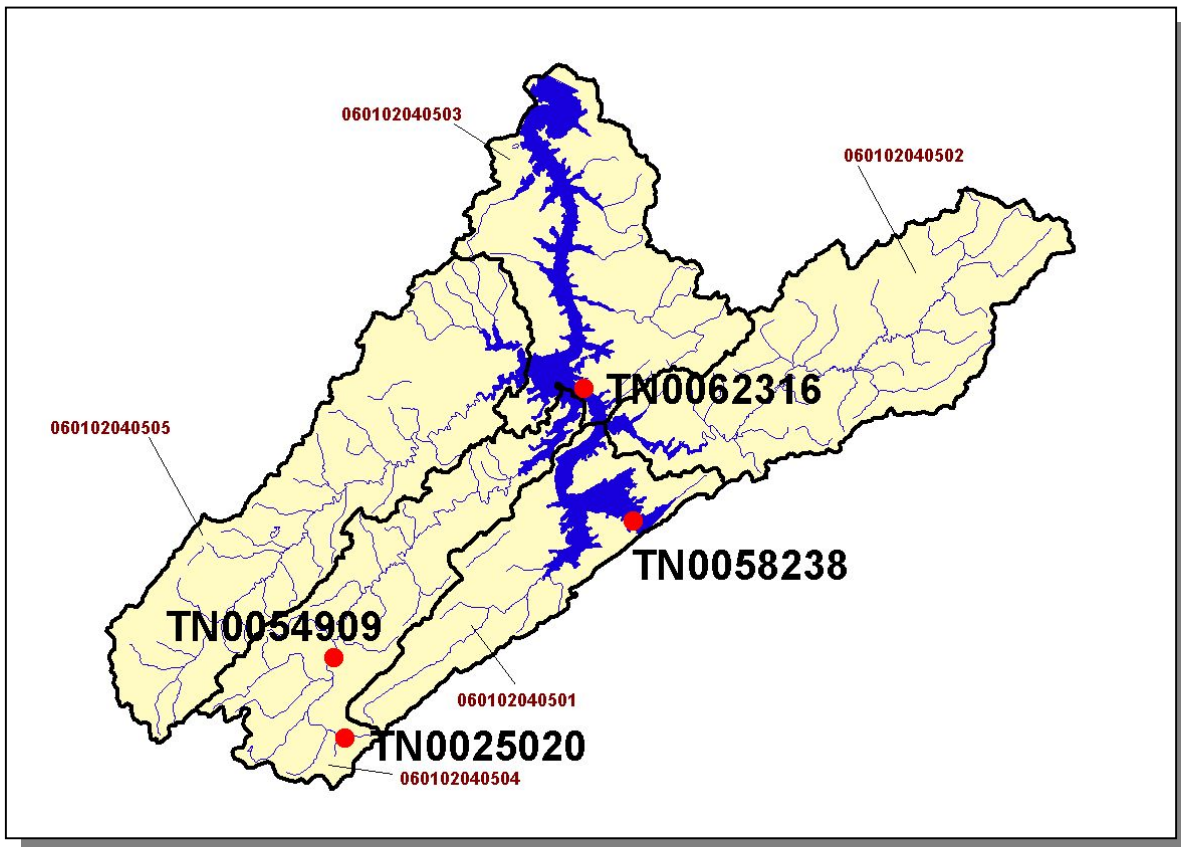


Figure 4-41. Location of NPDES Dischargers to Water Bodies Listed on the 2002 303(d) List in Subwatershed 0601020405. Subwatershed 060102040501, 060102040502, 060102040503, 060102040504, and 060102040505 boundaries are shown for reference. More information, including the names of facilities, is provided in Appendix IV.

PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0058238	1,100	1,200	1,500	970	0.3
TN0062316	990	1,000	1,200	890	
TN0025020	1.20	1.28	1.33	1.13	0.8
TN0054909	1.20	1.28	1.33	1.13	0.06

Table 4-24. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 2002 303(d) List in Subwatershed 0601020405. Data are in million gallons per day (MGD). Data were obtained from the USGS publication *Flow Duration and Low Flows of Tennessee Streams Through 1992* or from permit files.

PERMIT #	WET	CBOD ₅	FECAL COLIFORM	E.COLI	NH ₃	TRC	TSS	SETTLEABLE SOLIDS	DO	pH
TN0058238		X	X	X		X	X	X	X	X
TN0062316		X	X	X		X	X	X	X	X
TN0025020		X	X	X	X	X	X	X	X	X
TN0054909	X	X	X	X	X		X	X	X	

Table 4-25. Parameters Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2002 303(d) List in Subwatershed 0601020405. WET, Whole Effluent Toxicity; CBOD₅, Carbonaceous Biochemical Oxygen Demand (5-Day); TRC, Total Residual Chlorine; TSS, Total Suspended Solids.

4.2.D.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Milk Cow	Cattle	Chickens (Layers)	Chickens Sold	Hogs	Sheep
10,068	3,175	24,149	24	<5	214	192

Table 4-26. Summary of Livestock Count Estimates in Subwatershed 0601020405. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Blount	165.5	69.9	1.8	9.3
Loudon	62.3	62.3	1.1	3.5
Monroe	301.5	279.1	7.4	21.4
Totals	529.3	411.3	10.3	34.2

Table 4-27. Forest Acreage and Annual Removal Rates (1987-1994) in Subwatershed 0601020405.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.69
Legumes (Hayland)	0.77
Grass (Hayland)	0.53
Legumes, Grass (Hayland)	0.64
Grass, Forbs, Legumes (Mixed Pasture)	0.44
Forest Land (Not Grazed)	0.00
Forest Land (Grazed)	0.00
Corn (Row Crops)	11.58
Soybeans (Row Crops)	12.82
Tobacco (Row Crops)	2.98
Wheat (Close-Grown Cropland)	4.79
Oats (Close-Grown Cropland)	0.32
Non-Agricultural Land Use	0.00
Other Land in Farms	0.14
Farmsteads and Ranch Headquarters	0.22

Table 4-28. Annual Estimated Soil Loss in Subwatershed 0601020405.